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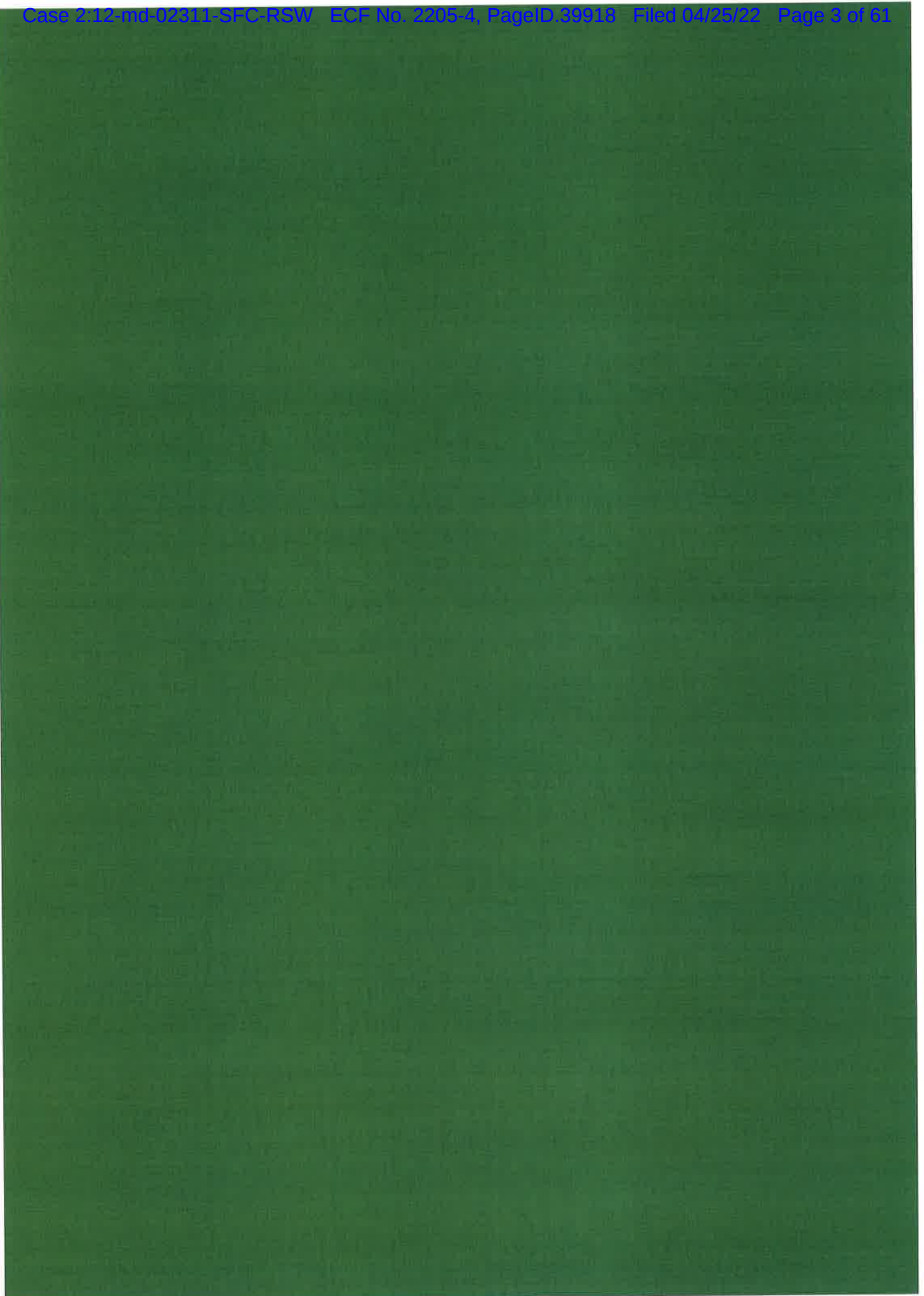
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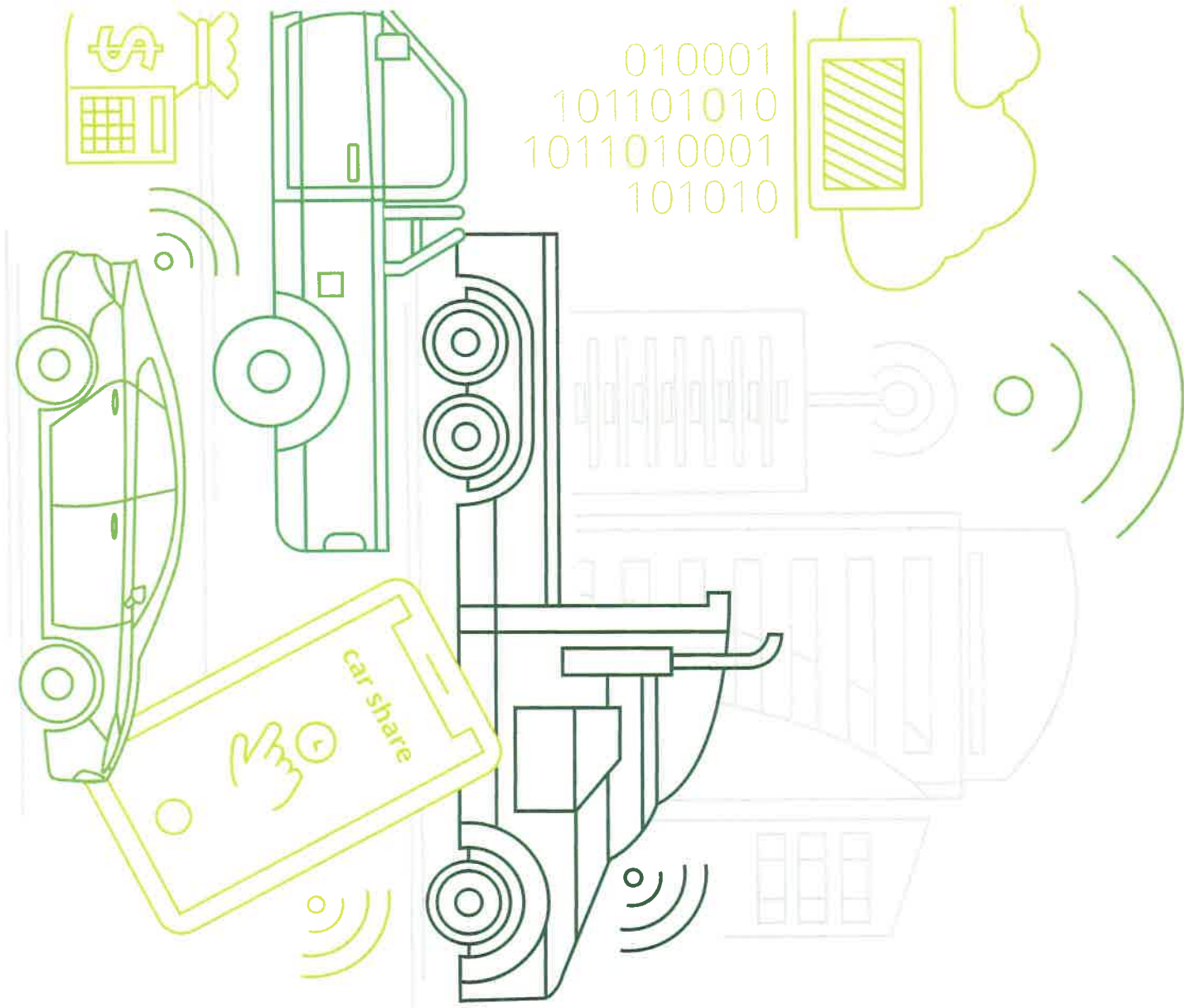
Fleet leasing & management in North America

Key enabler for
the future of mobility

Future of
Mobility



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The future of mobility may be spelled “fleet”

The way people and goods move about is in the midst of a dramatic transformation. Powered by converging social and technological trends, the extended automotive industry is being reshaped into a new mobility ecosystem. The scope and timing of the transition remain uncertain, but it seems increasingly likely that tomorrow's mobility landscape will be shaped by the widespread use of shared, autonomous vehicles, especially in urban areas.

This creates both tremendous opportunities and challenges for fleet managers in North America* and beyond. Fleet operators will likely be called upon to deploy a range of vehicles matched to users' preferences, to deploy their upkeep and storage, and to leverage enhanced smart routing capabilities that match supply and demand effectively. Doing so successfully requires today's core capabilities around multi-brand procurement, financing and full-service leasing, as well as holistic contract and service provider management on behalf of the client. Further, it also demands the ability to execute vehicle tracking to enable real-time monitoring of the fleet and the ability to set up, schedule, and allocate vehicles throughout the service area.

For those fleet managers with foresight and ambition, a further opportunity awaits in the future of mobility. Mobility advisors will seamlessly connect consumers with shared self-driving vehicles, as well as any other transport modes desires, thereby providing mobility-as-a-service (MaaS) on demand.

Fleet managers can position themselves to contend for this valuable position, but they are likely to face stiff competition from ride-hailing providers, telematics providers, and tech giants.

In addition, OEMs and their Captives enter this business to keep control of the vehicles, customers, and the data generated by these.

Today, North American companies and government entities rely heavily on their corporate vehicle fleets. One of the most obvious ones is the sheer land mass of the northern part of the American continent, which results in more than one million cars being sold to corporate clients annually.

Contrary to Europe's strong user-chooser market (see Deloitte's previous study on the European fleet leasing and management market), the corporate fleet segment in North America is predominantly driven by functional vehicle fleets. While entitlement to a company car is a common part of compensation schemes in Europe, North American employees tend to be given access to a company vehicle only if they need it to get their job done. As a result, the overall cost of these fleets can account for a significant part of corporate costs. Depending on the industry, these can amount to nearly 20 percent of total operating cost.

Therefore, a key focus area for fleet management in North America is on operational effectiveness and reducing the overall cost of these corporate fleets. To achieve these goals, more and more companies

outsource the management of their vehicle fleets to external providers who can leverage economies of scale.

These fleet management companies (FMCs) provide financing and driver and vehicle-related services to their customers. Typically, FMCs have either a dealership or rental background.

We hope you enjoy this outline on the current market environment for fleet managers and the strategic relevance of fleet management in the future of mobility and a world of shared and autonomous fleets.

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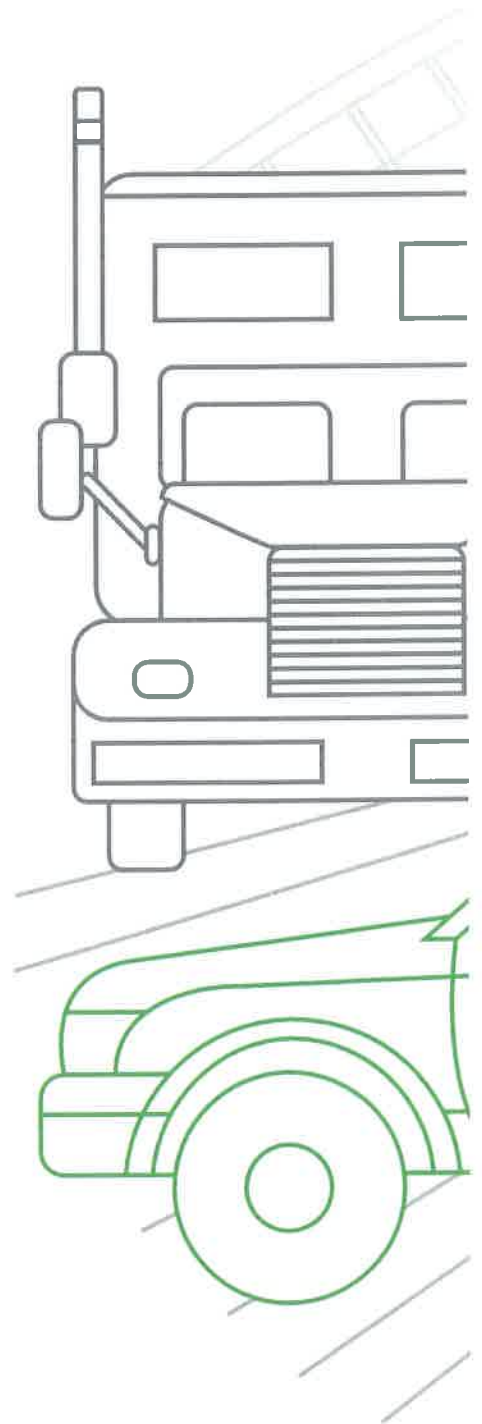
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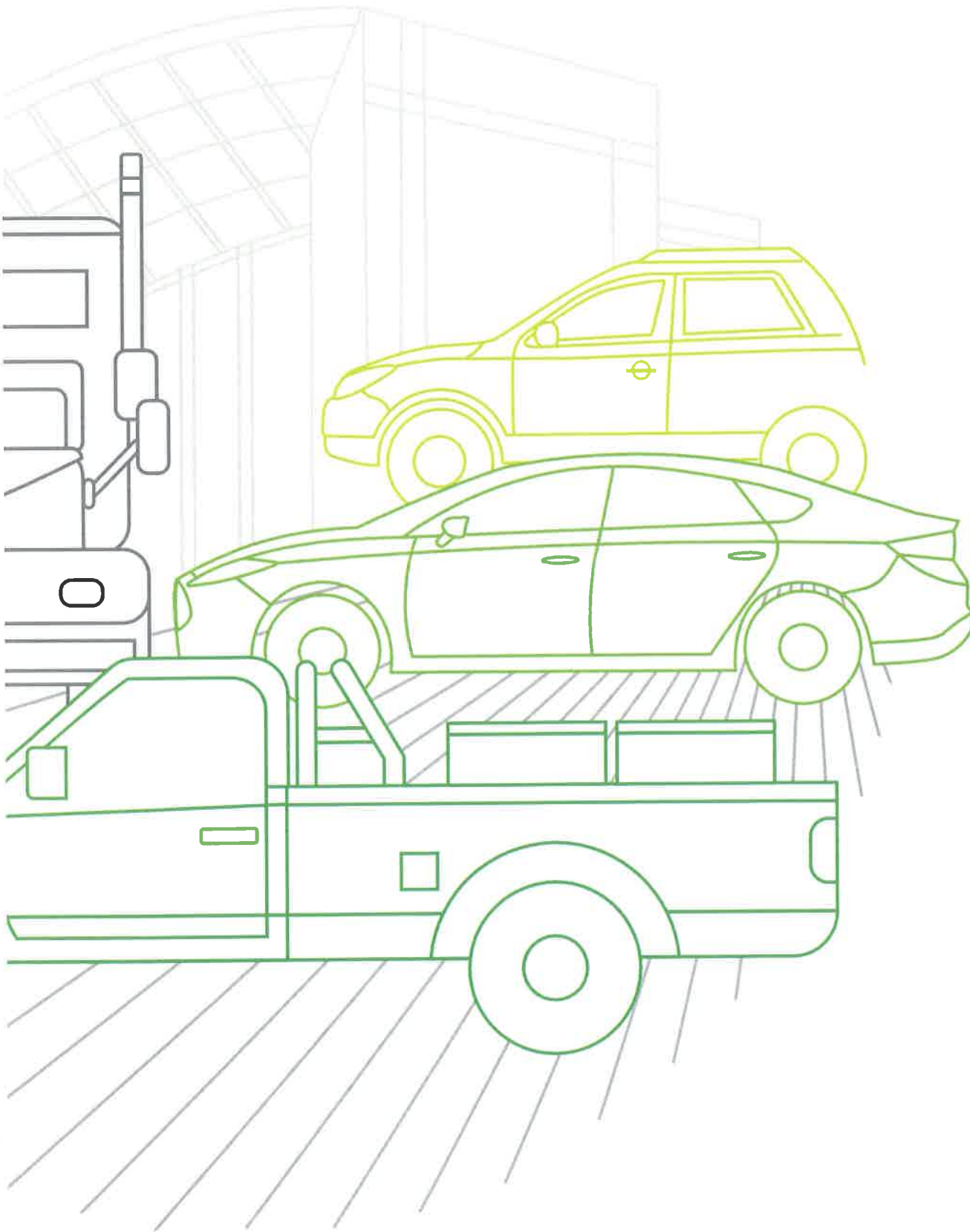
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*This study focuses on the markets in the United States and Canada

Fleet market environment

The North American fleet market is dominated by functional vehicles. Fleet vehicles are key enablers for employees to fulfil business tasks on behalf of the company.





The North American market for new vehicles is characterized by two major customer segments: private and corporate customers (including registrations for governments). In 2016, about 20 percent of new light vehicle sales (see Figure 3) were registered to corporates. The average fleet vehicle portfolio has a high focus on pickups and SUVs.

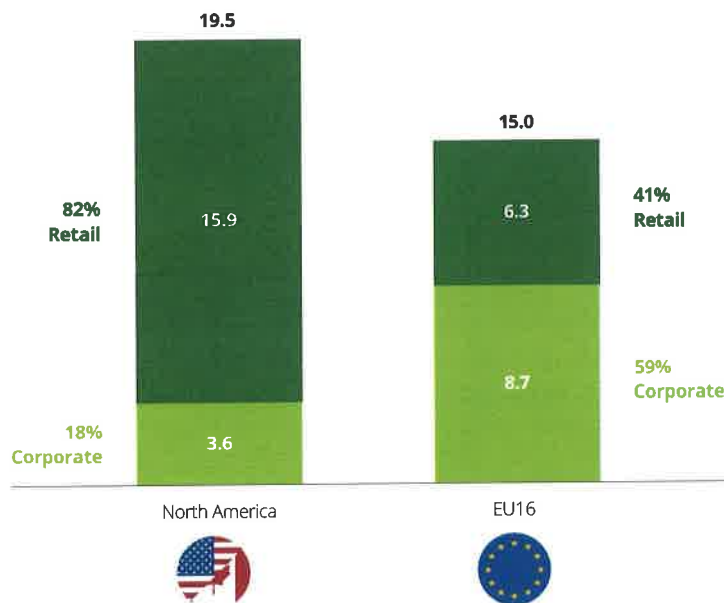
Compared to Europe, where 59 percent of registrations are aligned to corporate customers, the corporate channel in North America is relatively small with 18 percent or 3.6 million vehicles (see Figure 1).

Out of those, about two thirds of new vehicles are registered to the rental car channel, leaving 1.3 million vehicles in the fleet market, including company and government fleets.

Growth in the fleet market has mirrored that of the total North American vehicle market for the past eight years and is projected to grow at a compound annual growth rate of 3.5 percent until 2020.

Historically, companies owned their company vehicles and managed their fleets in-house. In recent years, more companies have shifted their fleet strategies towards financing and leasing rather than purchasing vehicles to reduce their working capital.

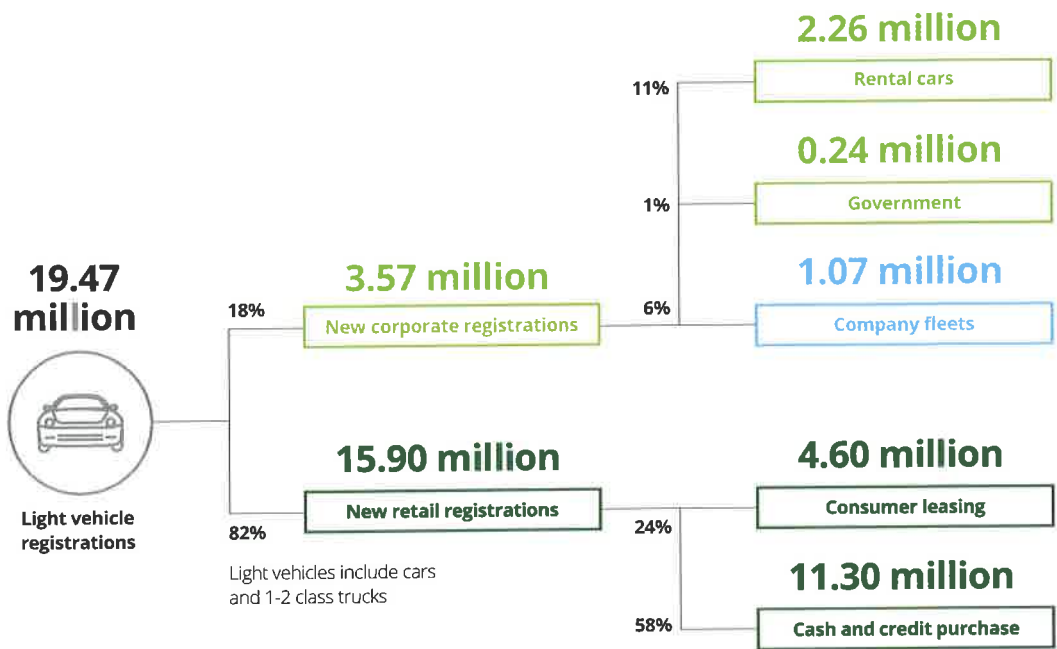
Fig. 1 – New light vehicle registrations 2016 for North America (USA & Canada) and Europe (EU16) in millions



Source: Deloitte Analysis, Wardsauto (2016)¹, LMC (2016), Dataforce (2016)

2016: Record year for North American new light vehicle registrations

Fig. 2 – Breakdown of new vehicle registrations for North America (USA and Canada)



Source: Deloitte Analysis, Frost & Sullivan (2014),² Auto-News Sales Report, LMC (2016), LeaseMarket Report 2016, Automotive-Fleet Canada (2015) ³, DesRosiers (2015)⁴

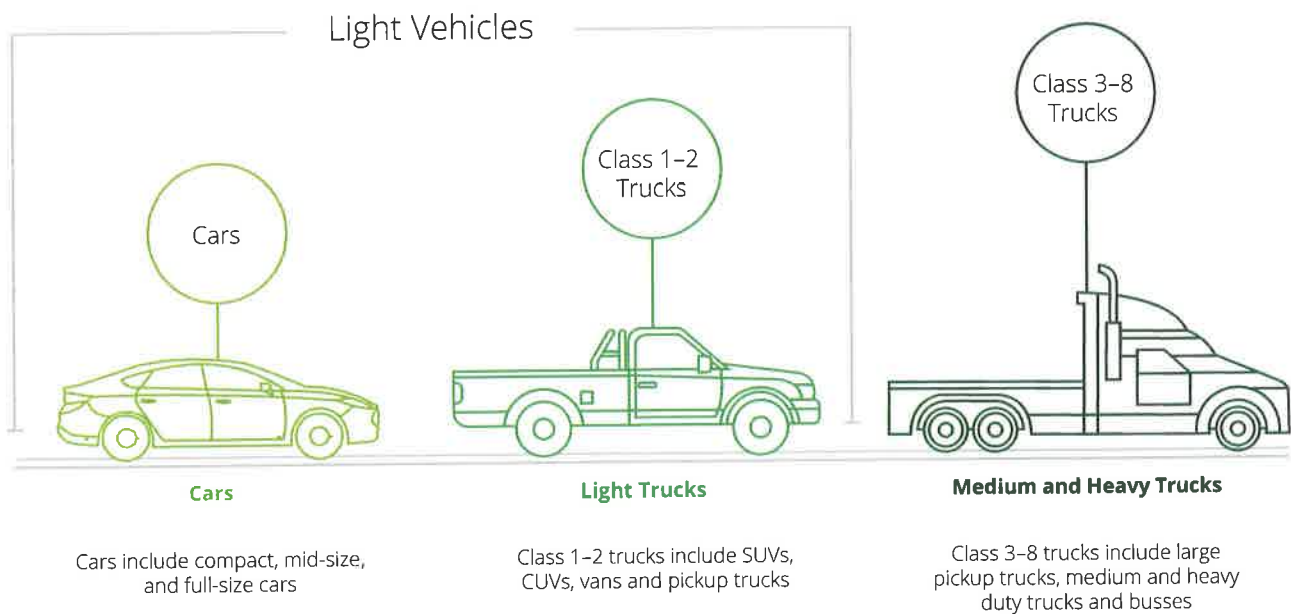
In North America, 2016 was a record year in terms of vehicle sales numbers, with 19.5 million vehicles sold. Of these, almost 17.5 million new registrations in the US and 1.95 million in Canada. Figure 2 shows a breakdown of these sales by sales channels. The North American market is characterized by a large private retail share of 82%.

New commercial fleet registrations within the corporate channel account for roughly 6% of all light vehicle registrations.

When looking at the geographical allocation of fleet sales, California, Texas, Florida, and the North East have the highest concentration of fleet customers and therefore fleet sales. In Canada, Ontario, Quebec, and Alberta show the highest amount of new registrations.

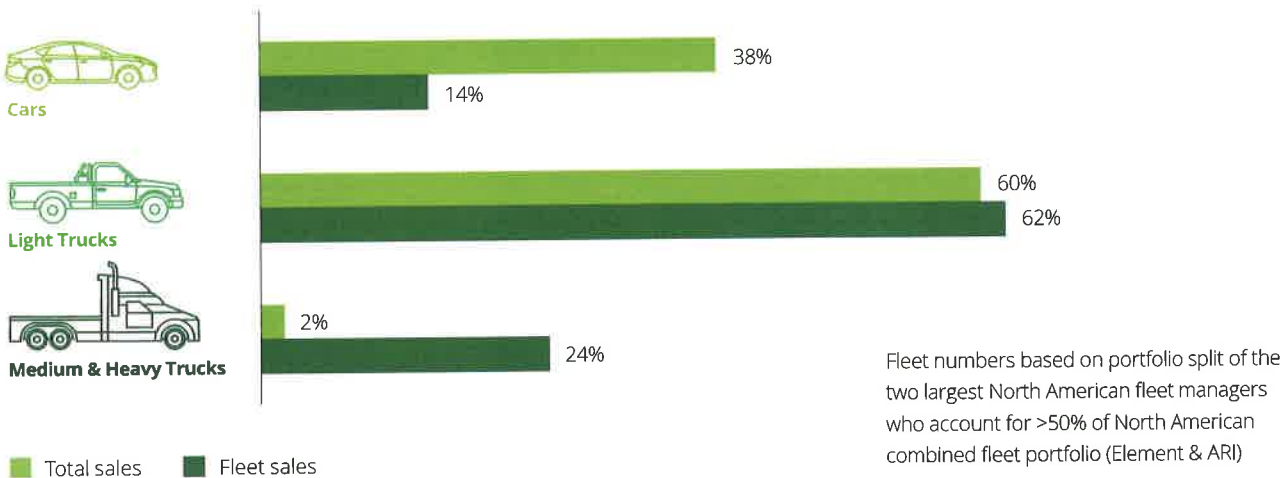
Car segment underrepresented in North American company fleets

Fig. 3 – North American vehicle segmentation



Source: Deloitte Analysis

Fig. 4 – Share of vehicle segments for total sales and fleet sales in North America



Source: Deloitte Analysis, Polk/IHS (2016), Element Company Report (2014),⁵ Standard & Poors ARI Rating (2015)⁶

North American fleet market is dominated by functional vehicles

The North American company fleet market's approach is simple: You only get a company car if you need it to get your job done. If a vehicle is an essential tool for the employee to carry out their job, the vehicle is most likely provided by the company. Functional vehicles vary from sedan cars for sales employees to up-fitted pickups and vans for craftsmen.

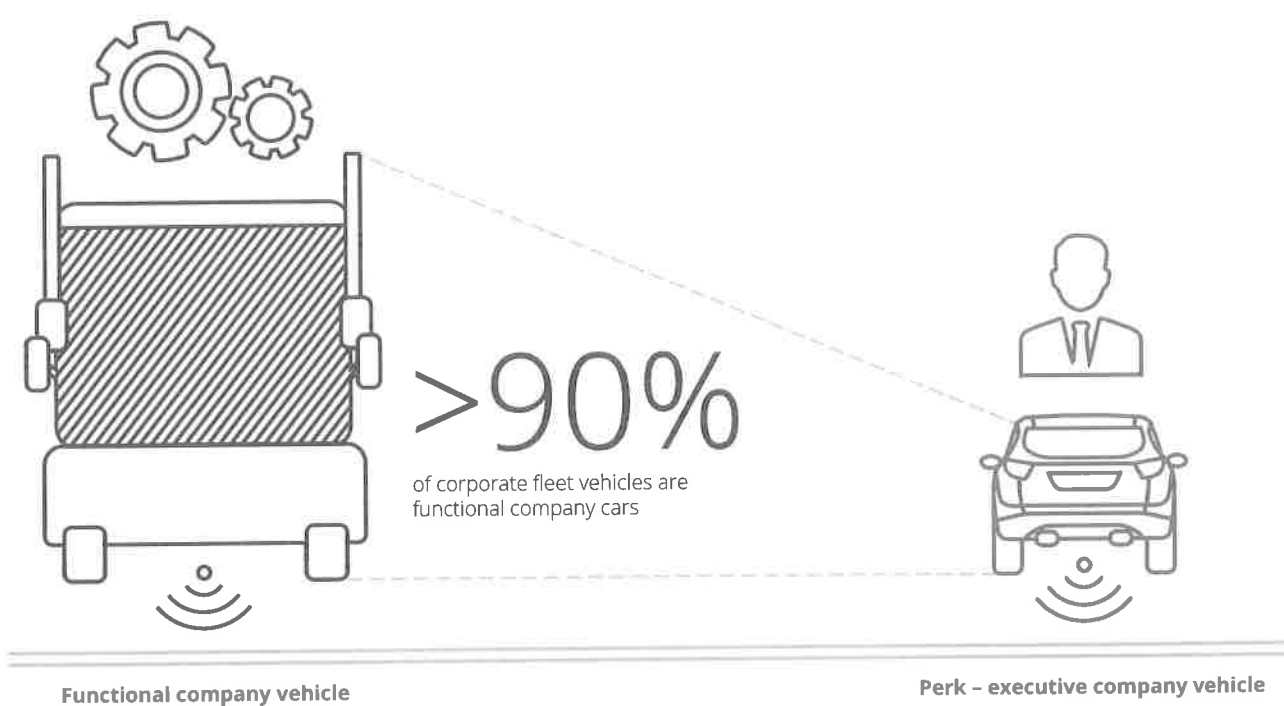
A minority of companies offer company cars as a benefit to employees. These perk recipients are typically executive managers.

By contrast, the commercial fleet environment is significantly different in most European markets which are dominated by a user-chooser car policy. Often international companies with European headquarters offer company cars as a benefit to harmonize employee compensation.

As company vehicles in North America are predominantly used as functional vehicles, it isn't surprising that trucks account for nearly two thirds of the fleet sector; likewise, the 14 percent of fleet sales attributed to cars (figure 3).

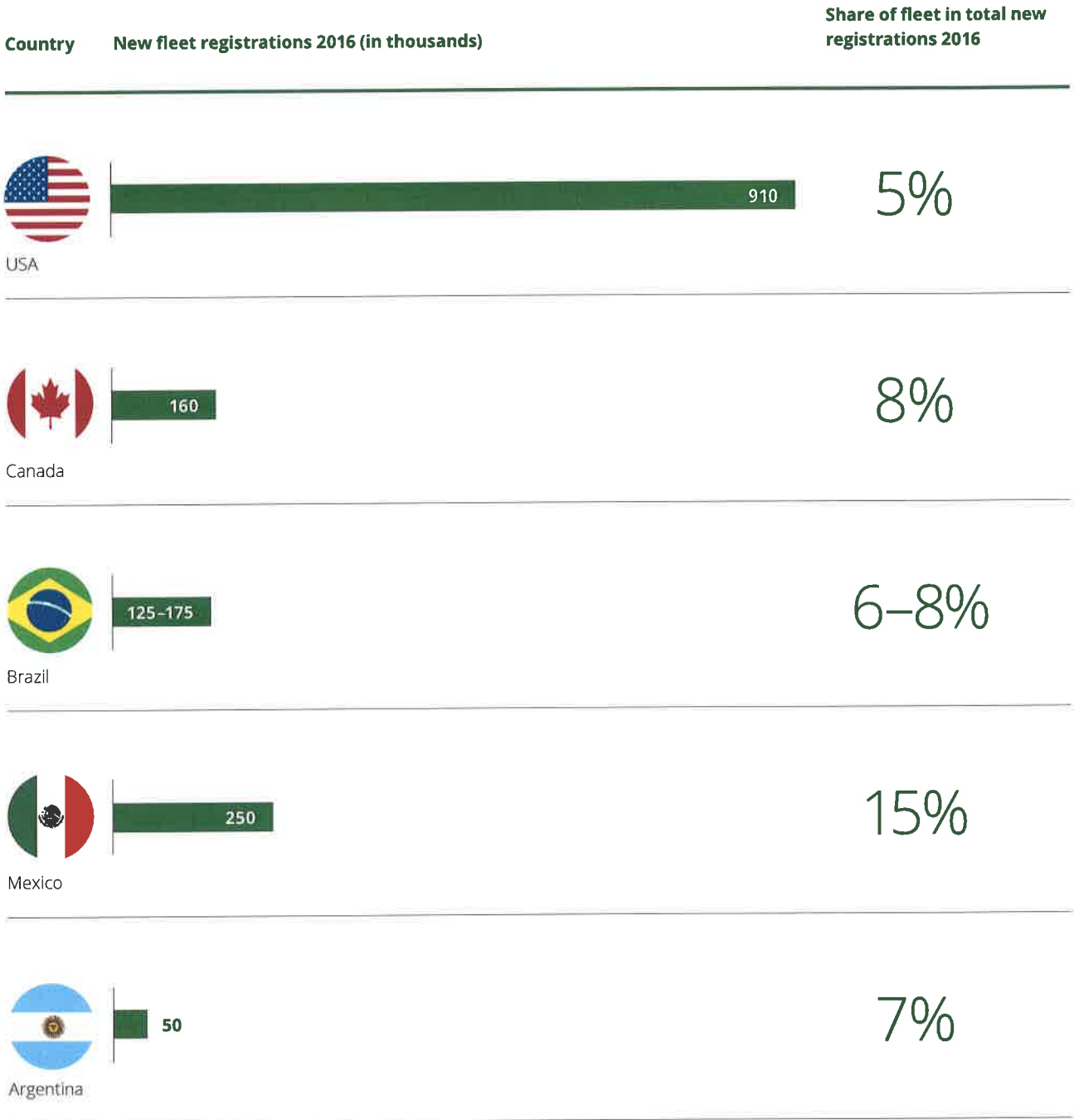
The differences between the European and North American company fleet markets becomes apparent when comparing which vehicles sell the most in each market. While in Europe, the VW Golf is the leading fleet vehicle, the Ford F Series pickup dominates the North America market. Interestingly, there is no vehicle that can be found in the top five of both European and North American company fleet lists.⁷

Fig. 5 – Distribution of perk versus functional company vehicles in North America



Source: Deloitte Analysis

Fig. 6 – Overview of fleet market in North America (US and Canada) compared to other major fleet markets in Americas



Description**Key market facts**

- Total number of new fleet vehicle registrations is expected to increase by 3.5% (CAGR) until 2020²
- After hitting a record year in 2016, light vehicle sales are expected to remain stable until 2020
- Expected annual GDP growth rates between 1.0–2.0 percent until 2020⁸

- **No user-chooser market**
- **Vehicle selection heavily based on price and discounts – brand preferences not as important as in Europe**
- **US fleet market dominated by domestic brands (GM, Ford, and Chrysler, with a combined market share of 60 percent)**

- Total number of new fleet vehicle registrations is expected to increase by 2 percent (CAGR) until 2020
- After hitting a record year in 2016, light vehicle sales are expected to be stable until 2020
- Expected annual GDP growth rates between 1.8–2.0 percent until 2020⁸

- **No user-chooser market**
- **Vehicle selection heavily based on price and discounts – brand preferences not as important as in Europe**
- **Canadian fleet market dominated by US and Asian brands**
- **Large pickups represent more than 40 percent of Canadian fleet market**

- Due to fragmented market, fleet market size can only be estimated roughly⁹
- Total number of new vehicle registrations is expected to increase to 3.5M by 2020¹⁰
- Expected annual GDP growth rates between 0.2–2.0 percent until 2020⁸

- **The fleet and lease market in Brazil is very fragmented**
- **The five largest companies control less than 25 percent of the total market; balance is spread over more than 7,000 smaller fleet management companies¹¹**
- **Local organizations compete on a level with large multinationals**

- Although overall automotive sales in Mexico grew by more than 19 percent in 2016, the fleet industry had a lower growth rate of just under 8 percent¹²
- Vehicle sales in Mexico increased by 19 percent in 2016 to a record slightly above 1.6M light vehicles¹²
- Expected annual GDP growth rates between 1.7–2.7 percent until 2020⁸

- **Vehicle sales have been stimulated by automaker financing with low interest rates and aggressive retail pricing from new players in the Mexican market¹²**

- Argentina still suffers from the effects of many years of economic isolation, which explains the virtual absence of lease and fleet management offers in the country¹³
- While Argentina has the second-highest number of fleet vehicles in South America and despite having made some progress, the country still has a very immature fleet management market
- Expected annual GDP growth rates between 2.2–3.0 percent until 2020⁸

- **Large multinational companies are the primary fleet market¹⁴**
- **Local corporations usually purchase their fleet vehicles rather than lease them¹³**
- **ALD and the Element-Arval Alliance have local partnerships (Autocorp and RDA Renting), however no international fleet management company has its own footprint in Argentina¹³**

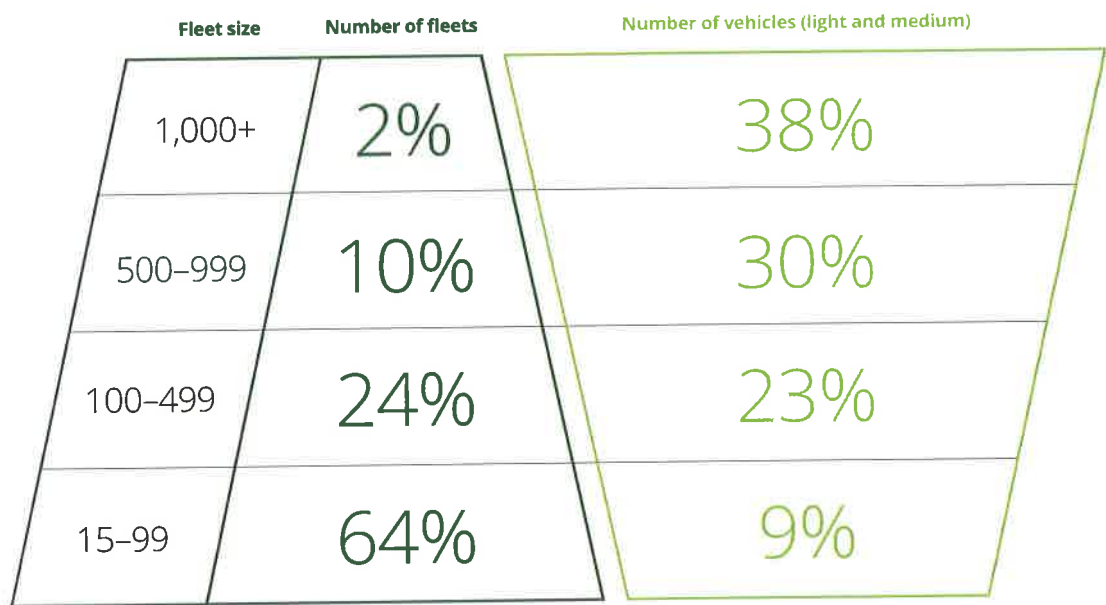
Majority of vehicles are in large fleets

Figure 7 illustrates the distribution of US fleet vehicles by fleet size. With 38 percent of vehicles, and only 2 percent of the number of fleets, the largest segment is those fleets with 1,000 or more vehicles. These include food and beverage companies, communication and network suppliers, and construction companies. They can easily exceed 10,000 vehicles and tend to rely mainly on class 1-6 trucks (for vehicle classification, please refer to Fig. 3 on page 6).

By contrast, insurance or pharmaceutical-related businesses tend to have a strong focus on cars, vans, and SUVs.

In North America, the majority of sales are initiated by the fleet company's procurement or fleet management department and are driven by practicality. Unlike the European market, a key person from procurement or strategic sourcing usually decides which vehicle is acceptable for each class of drivers. The buying criteria parameters mostly rely on cost optimization or total cost-of-ownership simplification. In fact, it is not uncommon for a fleet with more than 100 cars to contain the exact same make and model.

Fig. 7 – Number of commercial fleets and fleet vehicles (on the streets) in correlation to fleet size (USA 2016)



Source: Deloitte Analysis, Automotive Fleet (2016)¹⁵

Fig. 8 – Share of in-house and outsourced fleet management services in correlation to fleet size (US 2015)

Source: Deloitte Analysis, AF Research Department (2014)¹⁶

Operating costs for fleets are often within the top five spending areas for an organization. Companies operating large fleets are more likely to outsource their fleet management to external parties.

Fleet management companies not only oversee financing and leasing, but also manage entire fleets.

With a large number of vehicles under management, these companies can offer lower prices due to economies of scale and strong buying and bargaining power with OEMs and other service providers. Besides these efficiency-driven rationales, fleet customers also value the transfer of paperwork and risk responsibility of fleet compliance and regulatory requirements into the hands of the fleet management companies, which typically have dedicated regulatory and legal departments to assist their clients.

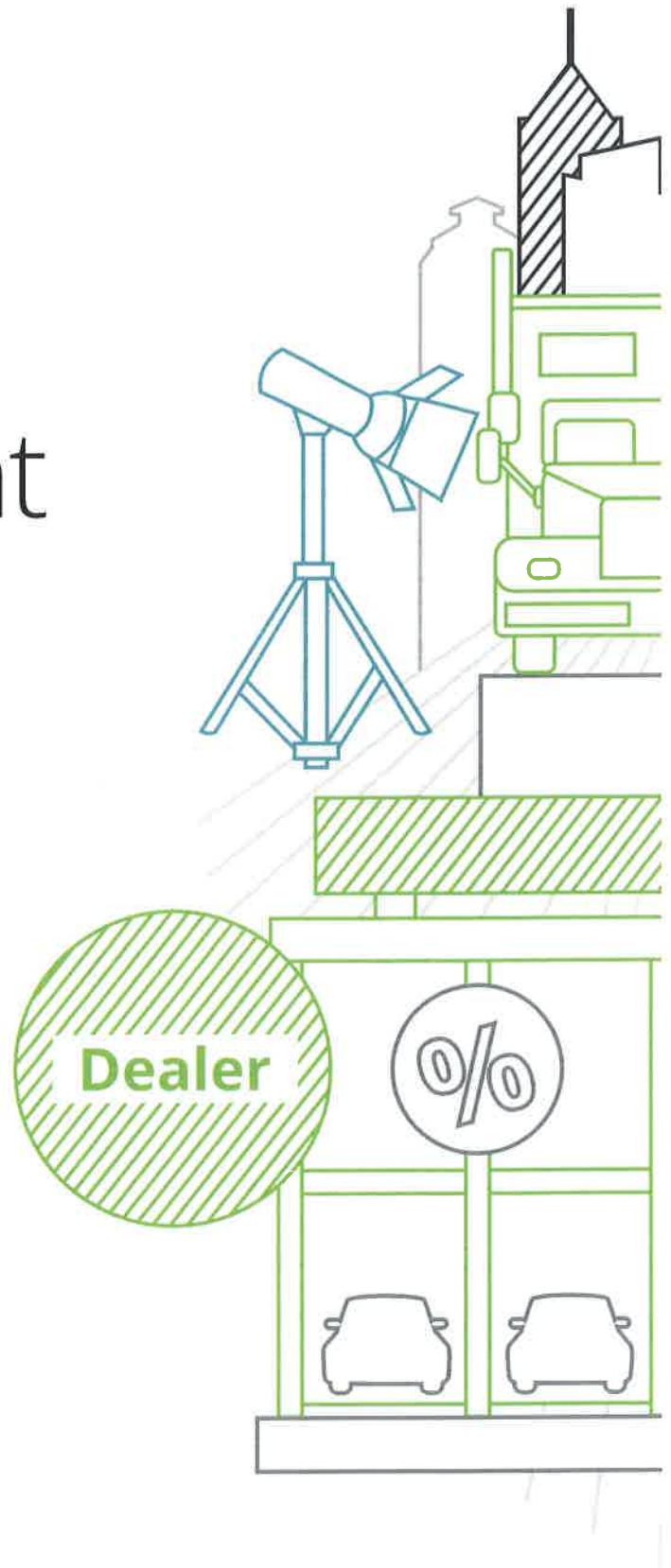
For North American fleet management companies, two areas of opportunity for growth include:

- Increasing their market penetration by conquering existing key accounts from their competitors and winning new customers segments such as government fleets.
- Encouraging more companies to outsource their non-core business of fleet management

Further outsourcing
of fleet management
services offers
growth potential.

Key players in the fleet management market

North American fleet management companies historically derive from car dealer groups and rental companies.



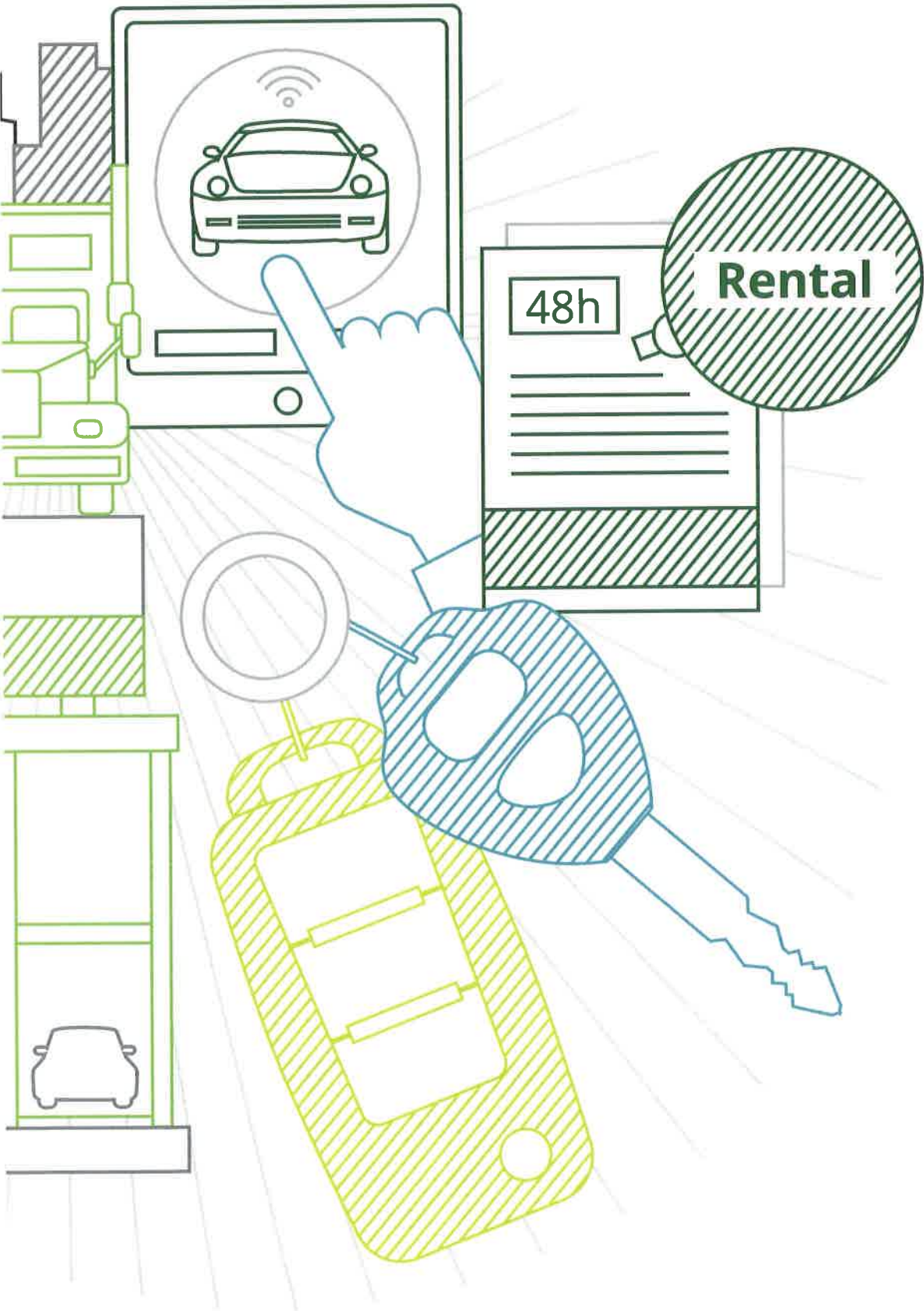

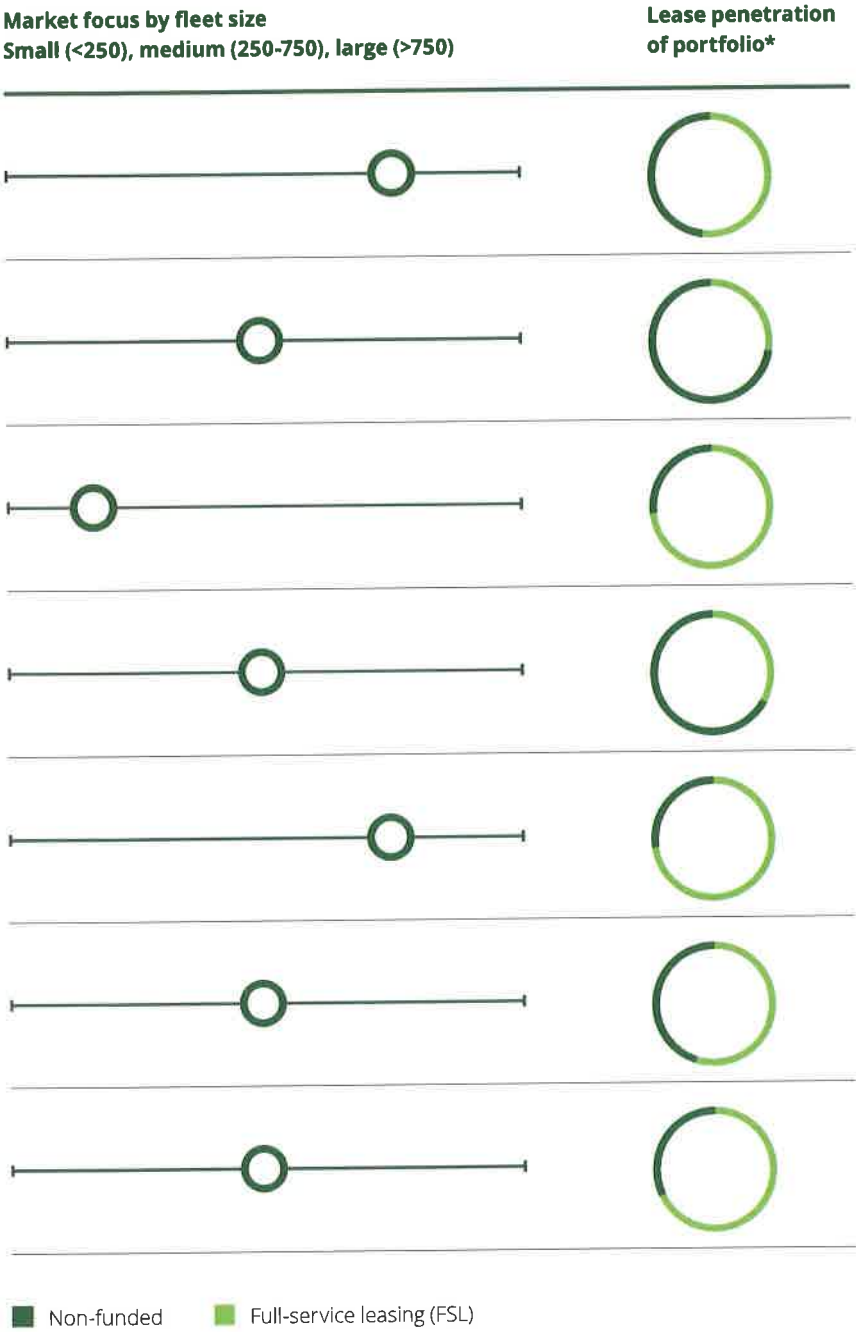


Fig. 9 – Key players in the fleet management market

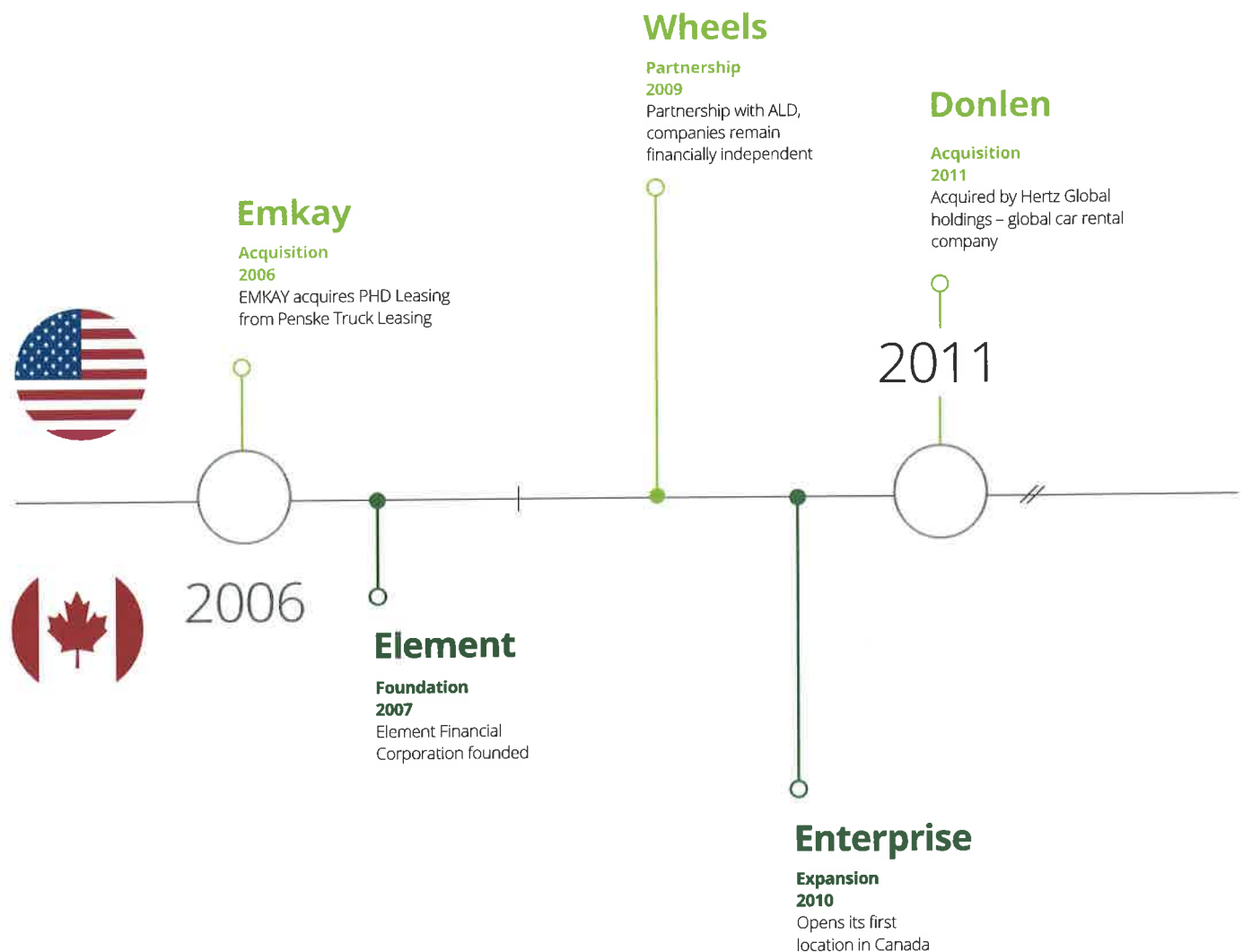
Competitors	NA fleet size as of 2016	Geographic focus	Global partnerships
Element	> 1.5 M		Arval (BNP Paribas Group) – Global AVIS Fleet – Africa Sumitomo – Asia
ARI	> 1.0 M		Localiza – South America Orix – Asia
Enterprise Fleet Management	> 470 k		–
Lease Plan	> 350 k		Own global footprint, partnering with Foss in Canada
Wheels	> 300 k		ALD (Société Générale) – Global FleetPartners – Australia
Donlen	> 300 k		Athlon (Daimler) – Europe Jim Pattison – Canada
Emkay	> 300 k		–



Most major player in NA market have a global footprint through partnerships.

Select M&A activities of market leaders

Fig. 10 – Selected acquisitions and partnerships in NA in the last ten years



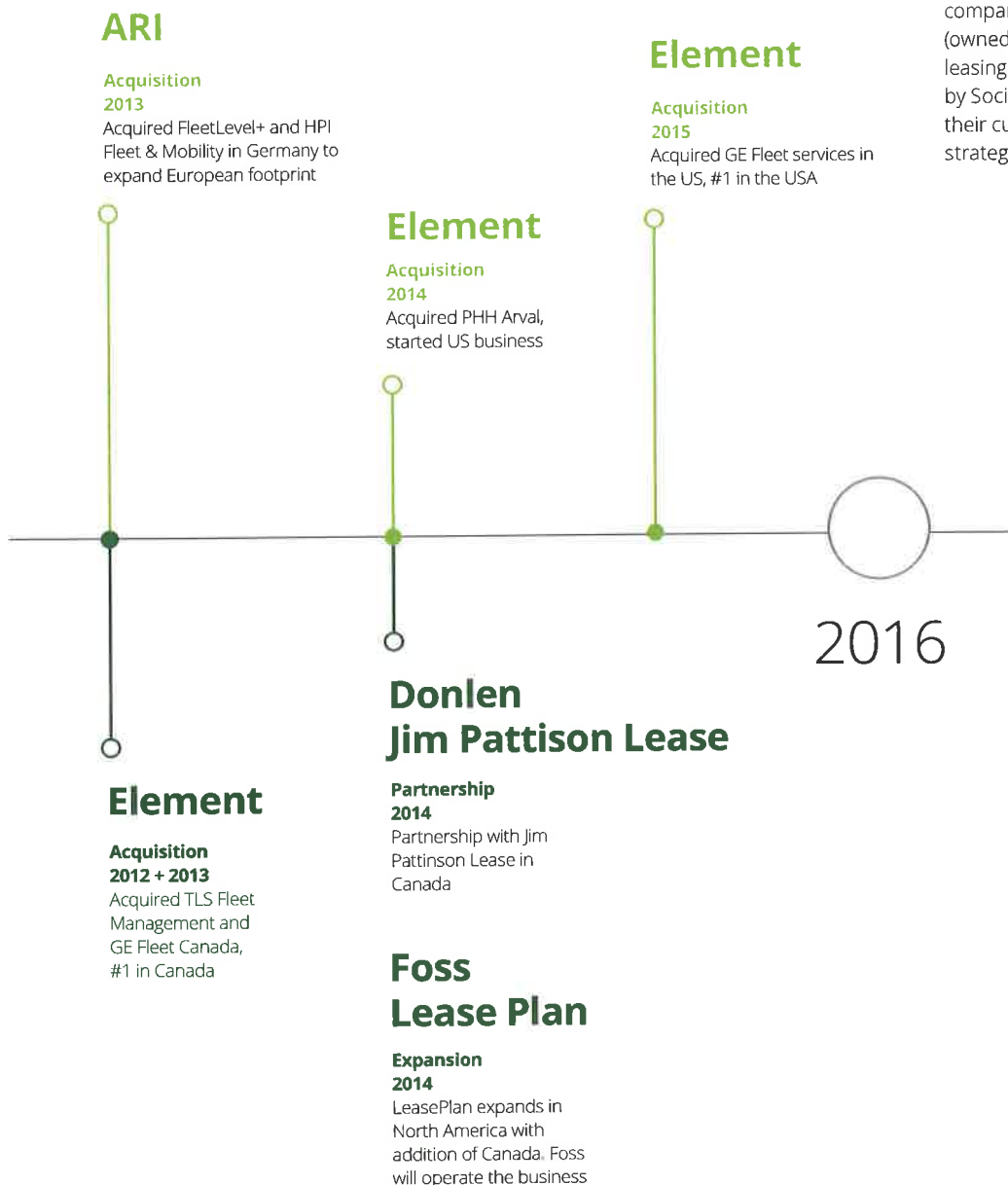
The last ten years have seen a wave of consolidation in the North American fleet market, and that movement has led to an industry dominated by five players: Element, ARI, Enterprise Fleet Management, LeasePlan, and Wheels combined cover more than 90 percent of the market.

One example of this fast-paced trend is Element Fleet Management. Founded in 2007, Element managed to become the North American market leader through four major acquisitions in less than ten years. The Canada-based company started its business providing equipment financing

services. With the acquisition of TLS Fleet Management from Scotiabank, Element started its fleet financing and management business in 2012. Today, it manages >1.5 million vehicles in North America and is a member of the largest global fleet management alliance Element Arval.

Globally, the world of fleet management is dominated by alliances.

Besides ARI, no other North American fleet management provider has its own footprint in Europe. Daimler's fleet management company Athlon partners with Donlen (owned by Hertz). The European fleet leasing & management giant ALD (owned by Société Générale) serves the needs of their customers in North America with a strategic partnership with Wheels.



Strategic acquisition to broaden business model

In the last six years, a lot of movement could be witnessed in the North American fleet management market. In 2011, the rental car company Hertz acquired Donlen. This transaction was part of Hertz' growth strategy to provide flexible transportation programs for corporate and private customers. According to Hertz management, the Hertz network will be used to expand its fleet business to Europe and other international markets.¹⁷

Based on its strategic partnership with European-based fleet management company Athlon (a Daimler AG subsidiary), Donlen is able to deliver global coverage in 144 countries.¹⁸

Fleet management as an investment case

Element Fleet Management started its fleet acquisitions in the Canadian market with TLS Fleet Management in 2012 and expanded into the US market with the acquisition of PHH Arval in 2014. The acquisition of GE's fleet in the US, Mexico, and Australia/New Zealand was enabled by the collection of a blind pool in 2015. Element Financial Corp.* was able to raise \$2.5 billion of equity capital via the sale of subscription receipts (\$1.85 billion), convertible debentures (\$500 million) and rate reset preferred shares (\$150 million).¹⁹ Within four years, Element became the market leading fleet management company in North America.

After a decade of consolidation, a few players dominate the market.

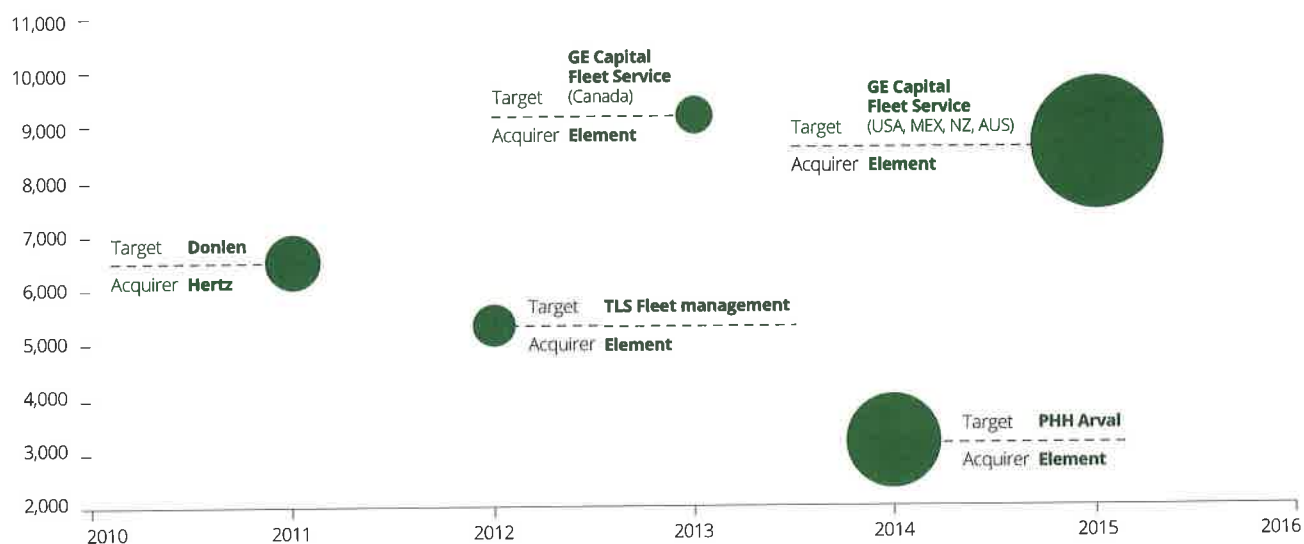
Fig. 11 – Select M&A activities in the North American fleet market

Year	Buyer	Target	Market	Deal value (\$M)	Total # of vehicles	Price per vehicle (\$)
2015	Element	GE (US, Mex, ANZ)	US	6,900	800,000	8,625
2014	Element	PHH Arval	US	1,400	440,000	3,182
2013	Element	GE Capital Canada	CA	549	60,000	9,150
2012	Element	TLS Fleet Management	CA	390	73,000	5,342
2011	Hertz	Donlen	US	947	144,000	6,576

Source: Deloitte analysis, mergermarket.com

Fig. 12 – Development of price per contract for select transactions

Average paid per contract in US\$



Global view Element-Arval

Fig. 13 – Geographical focus of Element-Arval

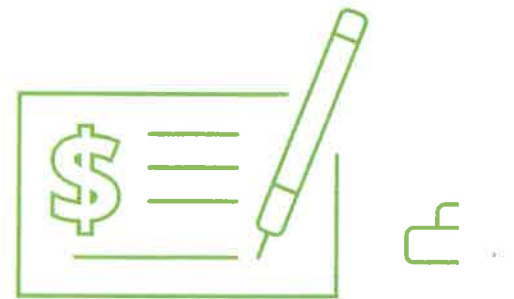




Business model analysis

Fleet management is evolving into a service business to lower operating costs for customers.

Remar



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Profitability comparable to EU

Fig. 14 – Selected financial data from leading North American and global fleet management companies (for 2016)

	Element	Lease Plan	ALD Automotive
Footprint	Americas	Global	EU
Number of vehicles	> 1,500,000	> 1,700,000	> 1,400,000
Balance Sheet	\$M	\$M	\$M
Total assets	13,694	25,014	19,463
Total equity	2,960	3,234	3,168
Income statement			
Net interest income	314	468	535
Other income	382	1,122	779
Operating expenses	331	1,060	582
Net income	307*	447	542
Key KPI			
Return on total assets	2.24%	1.79%	2.79%
Return on equity	10.38%	13.83%	17.12%

Source: Company annual reports (2017)

* including business acquisition and separation costs, net income for the year from distributed operations and gain on distribution of assets, net of taxes

Comparison of NA and EU fleet market

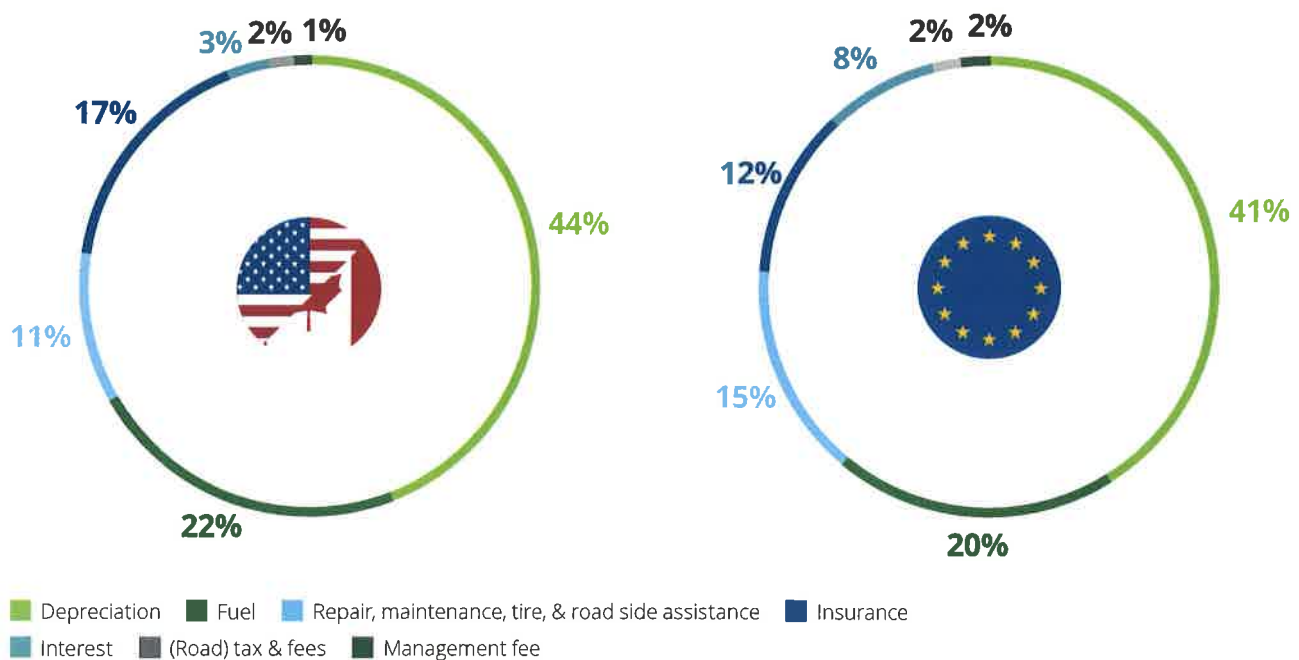


Key financials	Key financial figures of the leading players in North America and EU are very similar	
Customer base	Focus on utility and commercial	Focus on user chooser
Vehicle base	Focus on trucks	Focus on cars
Business model	Focus on open-end lease	Focus on full service leasing
Market share**	~6%	>30%

** Share of company fleet registrations within total yearly light vehicle registrations

Total cost of ownership in North America and EU are similar

Fig. 15 – Average total cost of ownership for company vehicles in North America and Europe



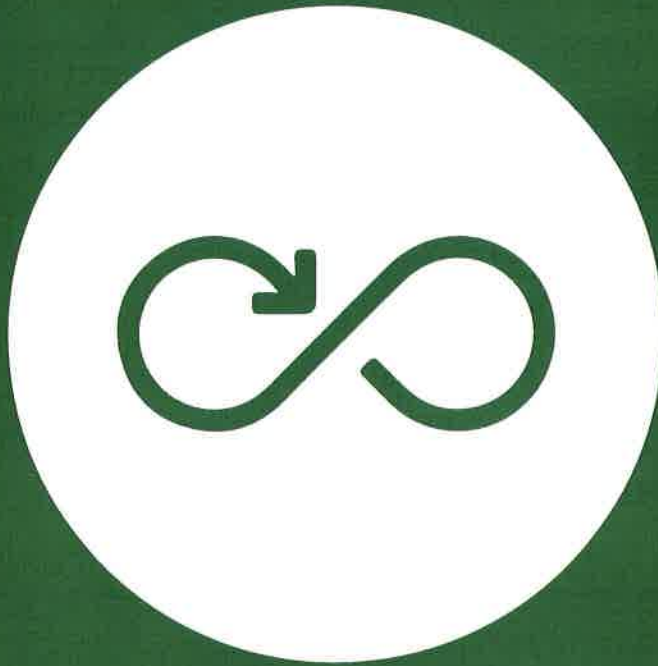
Source: Global Fleet Insights (2016)²⁰, LeasePlan (2016)

From a customer perspective, the total cost of ownership (TCO) analysis is key to identifying cost saving potentials and reducing operating expenses. Figure 14 shows a typical TCO split for a fleet vehicle comparing North America and Europe. Depreciation takes the largest slice over the lifetime of a company vehicle. Fuel costs account for 22 percent of TCO, which is slightly higher than in Europe. Other significant costs include insurance-related expenses (17 percent) and maintenance, tires, and repair management (11 percent). The remaining costs can be attributed to interest expenses, additional services, and management fees.

Depreciation varies heavily with type and make of vehicle and should be considered carefully. The overall average depreciation in the US was around 16 percent in 2016. Cars lost 18 percent, while trucks lost on average 11 percent 2016. By comparison, in 2014 and 2015 full-size vans were very popular and had depreciation rates of less than 5 percent.

Managing and forecasting the residual values (vehicle value at end of lease contract) is one of the key competencies of a fleet management company.

Today, more companies tend to analyze and optimize the total cost of mobility (TCM) rather than TCO. While TCO gives a cost calculation per vehicle, TCM is calculated per mobility user (employee) and takes holistic multimodal mobility models into account. The TCM calculation considers all costs ranging from the vehicle itself and its related costs to other mobility options such as taxis, flights, car sharing, or rental cars.



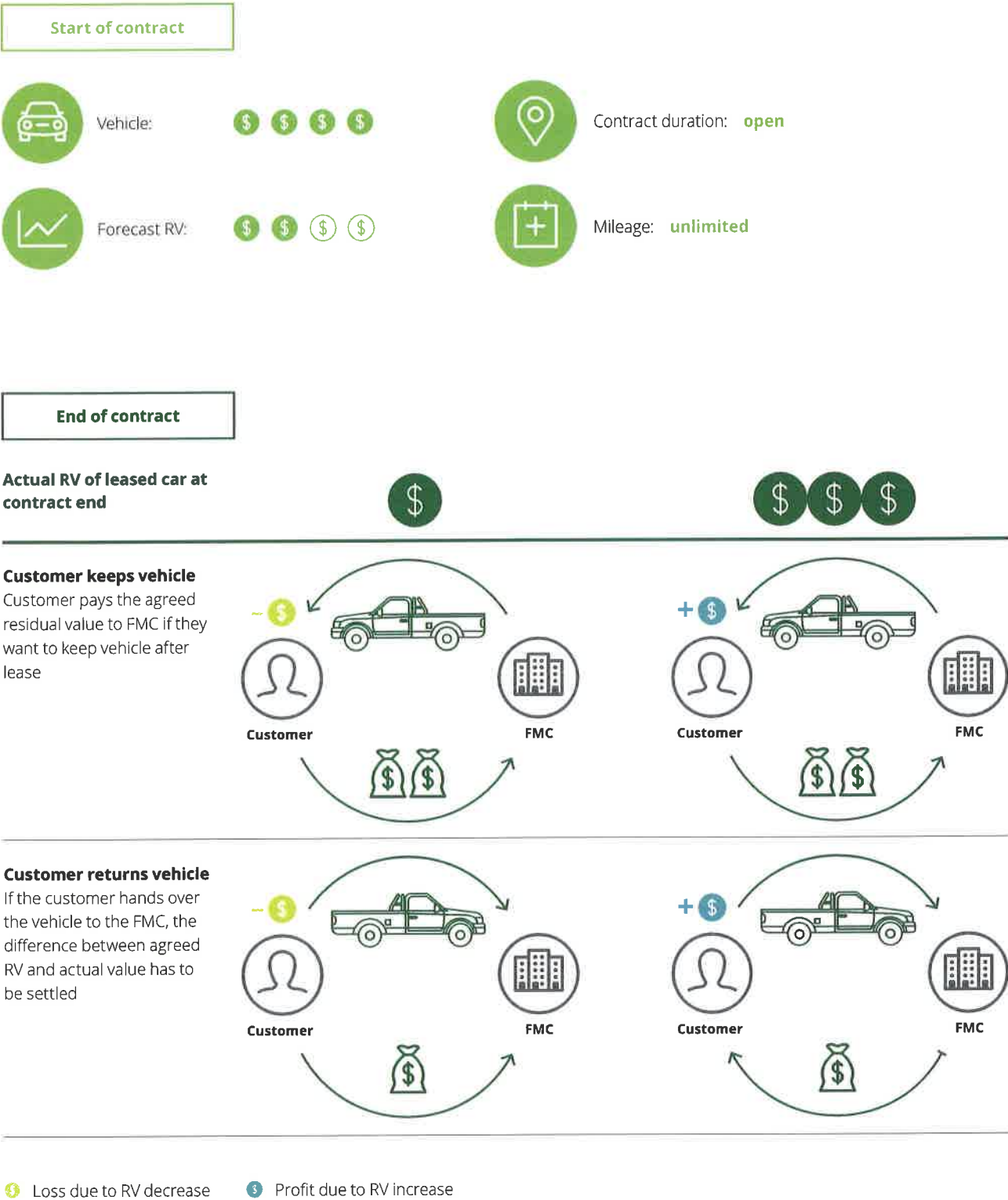
Open-end lease: Residual value risk with customer

North American customers favor open-end lease over closed-end lease contracts (90 percent/10 percent). In an open-end lease (also referred to as terminal rental adjustment clause or TRAC), the lessee (fleet customer) bears the residual risk but is more flexible in terms of contract length and does not have restrictions on usage and mileage. In case the market value exceeds the agreed residual value (RV) at the end of the lease, the customer gets rewarded by the fleet management company or can buy the vehicle for the agreed RV. If the actual market value lies below the agreed residual

value, the difference has to be settled and the customer needs to pay the difference to the fleet manager.

Contrary to the European fleet market, North American customers favor the open-end lease and are willing to take the residual value risk, predominantly to be more flexible in terms of mileage.

Fig. 16 – Overview of open-end lease



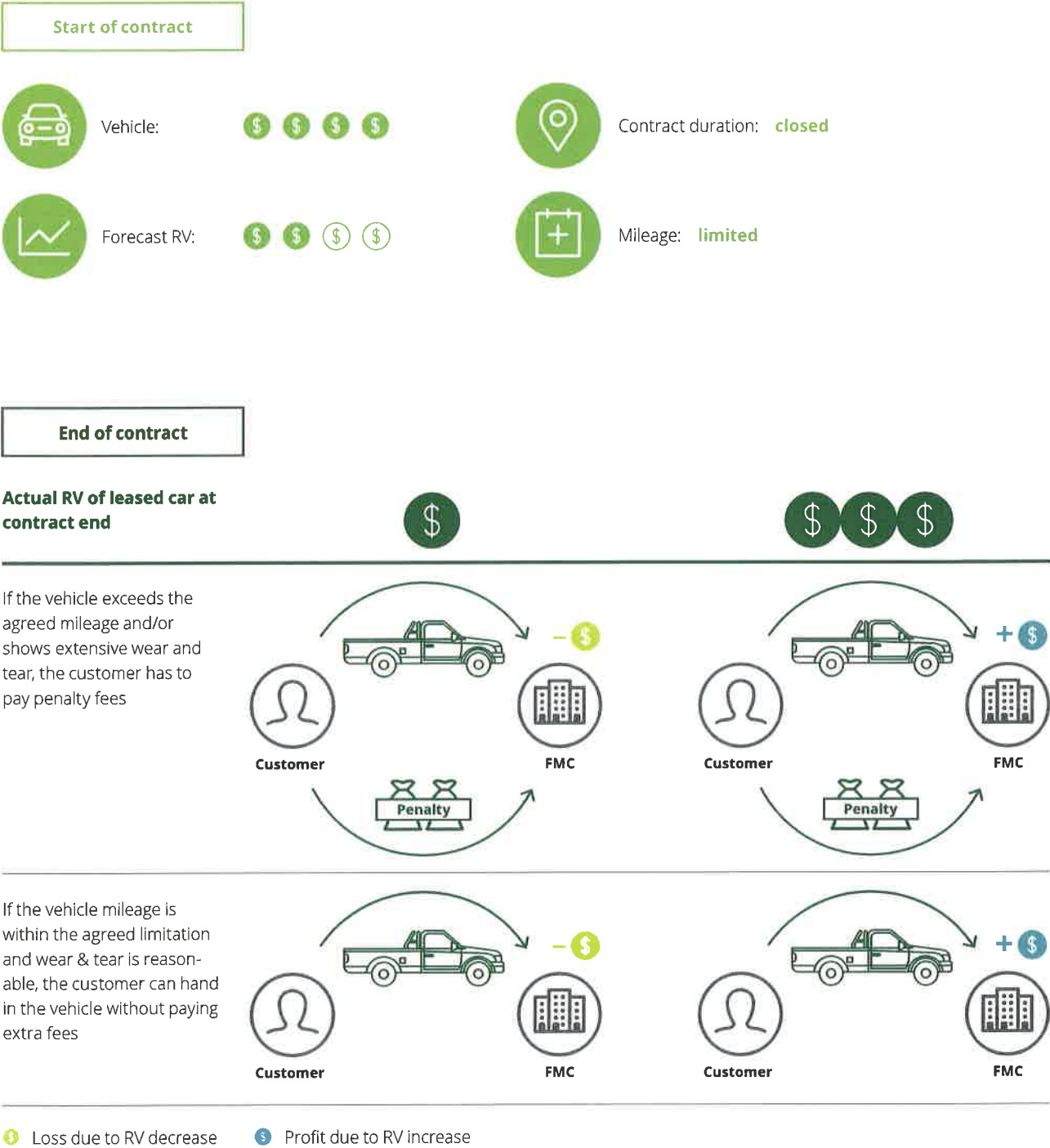


Closed-end lease: Residual value risk with lessor

In a closed-end lease, the fleet management company bears the risk of overestimated residual values. Closed-end leases come with more restrictions in terms of vehicle usage. Usually the mileage is limited to 12,000 to 15,000 miles per year. Additional mileage and excessive wear and tear will be charged at the end of the lease. However, other than that, the customer can hand in the vehicle without being concerned about the actual market value. The closed-end contract is therefore often called a "walk-away lease".

For a fleet management company offering closed-end leases, it is crucial to have a strong competency in residual value setting across makes and models.

Fig. 17 – Overview of closed-end lease



Service Income

Fig. 18 – Typical core services offered by North American fleet management companies



Licensing, Title & Registration

Management of the increasingly complex registration process



Tolls & Violation Management

Reducing administrative tasks while ensuring compliance



Risk & Safety

Driver training programs, motor vehicle record checks, driver risk profiles



Fuel Management

Fuel cards with discounts and systematic detection of abuse



Tire Management

Winter & summer tire change, storage of the second set during off season



Telematics

Manage fleet efficiency, increase driver productivity, lower operating costs



Maintenance Management

Network of shops, certified technical advisors, 24/7 service



Interim Car Management

Providing a replacement car in case of accident or maintenance



Personal Usage Management

Track personal mileage online, real-time reporting, compliance with IRS



Accident Management

Repair shop assignments, provide subrogation services, documentation



Consulting

Analyze telematics data and consult customers to improve TCO/TCM

Comprehensive IT tools and IT infrastructure will be key to analyzing data from telematics and deriving solutions for customers in order to reduce their total fleet cost.

Use of fleet telematics can provide significant cost savings and efficiency improvements

Growth potential

Today about 40-45 percent of all US fleet vehicles are already equipped with a telematics device, with adoption rates correlating with fleet size. Fleets with more than 25 vehicles have adoption rates twice as high as those with fewer than 25 vehicles. Nevertheless, this still leaves a large potential customer base as future growth opportunity for telematics providers.²⁴

OEMs use their own devices

The competition has become fiercer within the telematics market as more OEMs have included their own telematics devices to collect data during production of the vehicle. This limits potential for third parties to include telematics devices at a later stage.

As the number of interfaces in a vehicle's on-board network is limited, this action on the part of OEMs could pose a threat for fleet managers and telematics providers—and makes good partnerships with OEMs crucial for the future success of fleet managers and telematics providers, as more and more of their offerings are based on telematics data (e.g., predictive maintenance or driver behavior analysis and training).

ELD mandate

The electronic logging device (ELD) final rule, issued by the US Department of Transportation in December 2016, requires all commercial driving operations to keep hours of service records. Commercial motor vehicles have until December 2018 to comply with the rule. ELDs are designed to record data related to driver activity and operation of the vehicle. By affecting most of the commercial fleet industry, this rule will have impact on the overall telematics market and will further drive growth.²⁵

Market is consolidating

Today more than 1,500 providers of telematics solutions²⁶ are active in the North American market, many of them are rather small. During the last five years, a significant consolidation process has started (similar to the consolidation process of fleet management companies in Europe²⁷), peaking with the two large acquisitions by Verizon in 2016 (see also figure 21 on the next page). Deloitte expects this trend to continue as more and more players from related industries (e.g. telecommunication) expand their offering to vehicle telematics.

Telematics-driven solutions

Fig. 19 – Selected telematic enabled service offerings to increase fleet efficiency

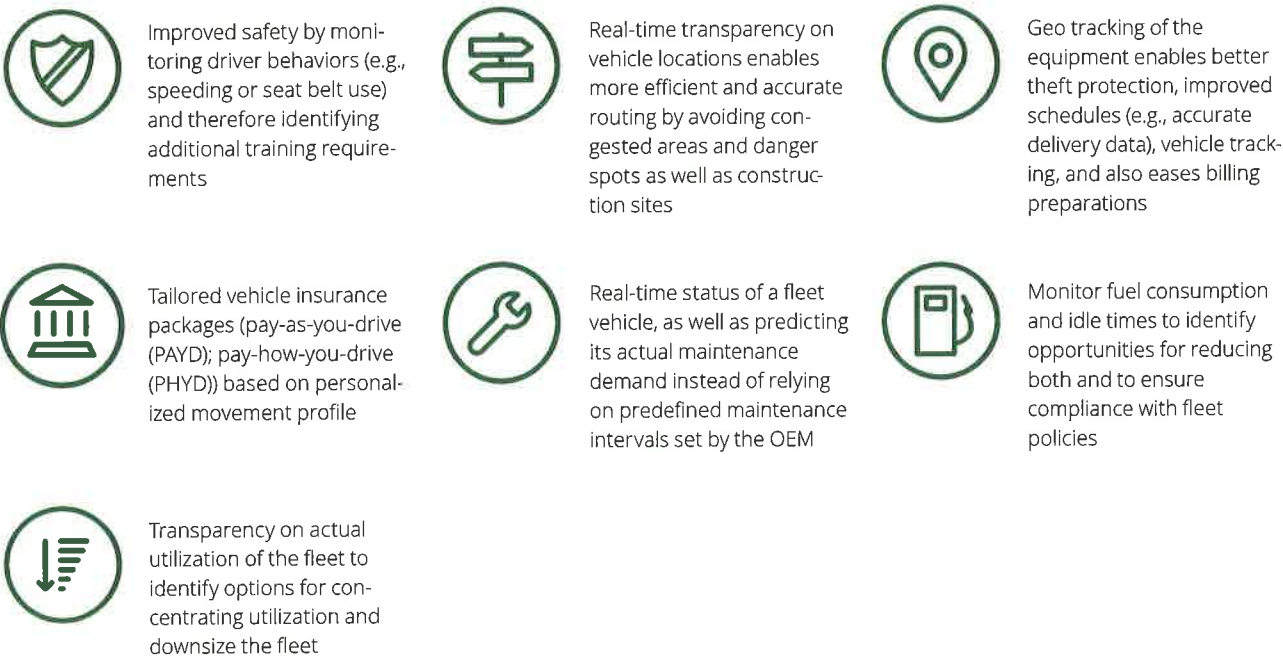
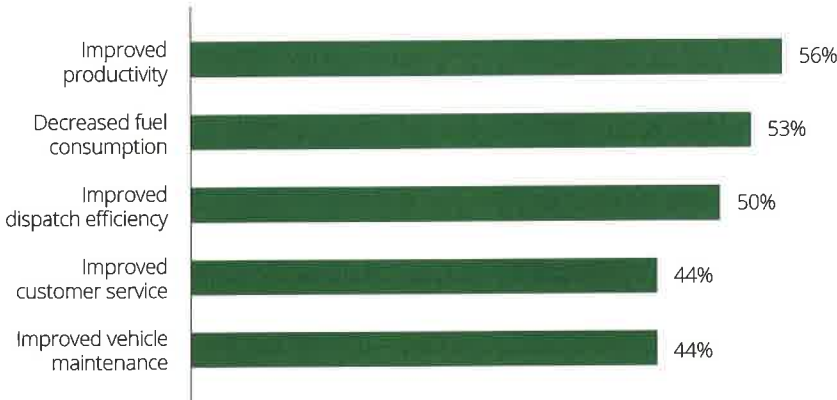


Fig. 20 – Top five benefits (percentage of companies that realized the particular benefit after implementing telematics)



Source: GPS Insight (2017)²⁴

Fig. 21 – Select recent acquisitions and partnerships of NA telematics providers

Year	Bidder	Target	Target description	Market	Deal Value (\$M)
2017	Element	The CEI Group	Fleet safety and accident management provider	US	n/a
2017	Michelin	NexTraq, Inc.	Provider of commercial fleet communications systems	US	n/a
2017	ORBCOMM Inc.	inthinc Technology Solutions, Inc.	Provider of fleet management and driver safety solutions	US	60
2016	Verizon Communications, Inc.	FleetMatics Group Plc	Company engaged in providing fleet management solutions	US	2,188
2016	Verizon Communications, Inc.	Telogis, Inc.	Provider of cloud-based location intelligence software platform	US	900
2016	WorkWave, LLC	GPS Heroes, LLC	Provider of GPS and telematics services	US	n/a
2016	Sierra Wireless Inc.	GenX Mobile Incorporated	Provider of in-vehicle cellular devices for the fleet management, asset tracking, and transportation markets	US	6
2016	Safe Fleet Holdings LLC	FleetMind Solutions, Inc.	Hardware and software applications provider	CA	n/a
2016	CalAmp Corporation	LoJack Corporation	Company providing stolen vehicle recovery technology	US	122
2016	GTCR, LLC	Lytix, Inc.	Driver risk management solutions company engaged in video telematics	US	500
2015	Element	Telogis, Inc.	Connected vehicle technologies and mobile apps	US	Partnership
2015	AT&T	Telogis, Inc.	Connected vehicle technologies and mobile apps	US	Partnership

Source: Deloitte Analysis, mergermarket.com



Fleet services provided by telecom companies

In recent years, major North American telecom carriers discovered telematics-driven fleet management as a strategic fit with their Internet of Things (IoT) strategy. The era of the connected car provides new growth opportunities for telecom operators. The focus has shifted from connecting passenger cars to tracking and connecting commercial trucks and fleet business. These areas have been identified as leading in innovation within the mobility space, ranging from vehicle tracking to driverless trucks.²⁸ With service offerings derived from big data analytics, the respective fleet management solutions are competing with traditional fleet management companies. Further leveraging digitalization even within the vehicles, the race for ownership of the data has just begun.

IT enablement important for fleet management companies

In order to compete in this highly competitive environment, fleet management companies need to adjust their businesses rapidly and invest in IT infrastructure. ARI for instance invests 25 percent of its operating budget in its IT systems and infrastructure to offer innovative solutions.²⁹ Element

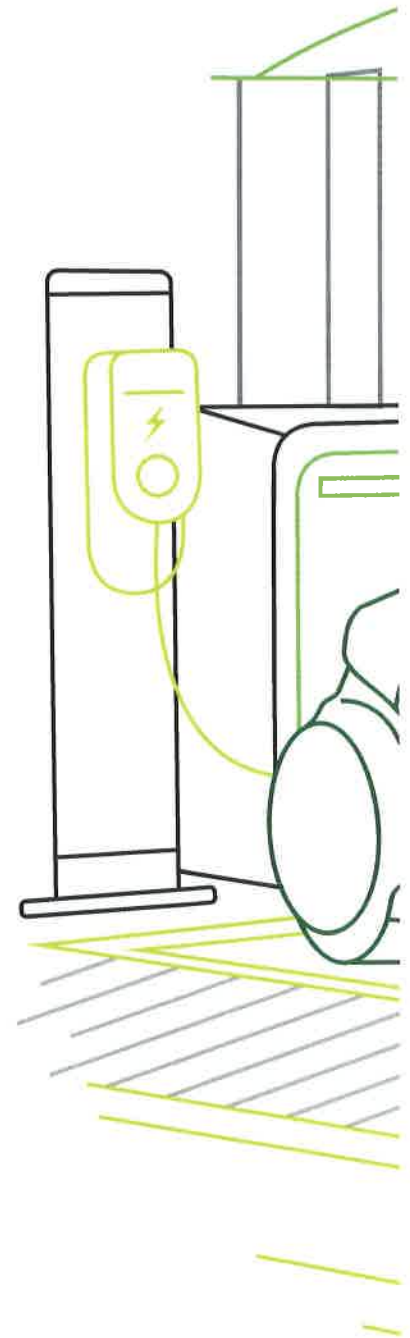
spent more than \$25 million on building a new and more efficient IT system to deliver real-time data processing.³⁰ Emkay, Inc. used a "big bang" transformation approach in 2014 and successfully completed more than 70 IT projects within a year. With agile project management and involvement of people at all levels, Emkay geared up in a disruptive industry.³¹

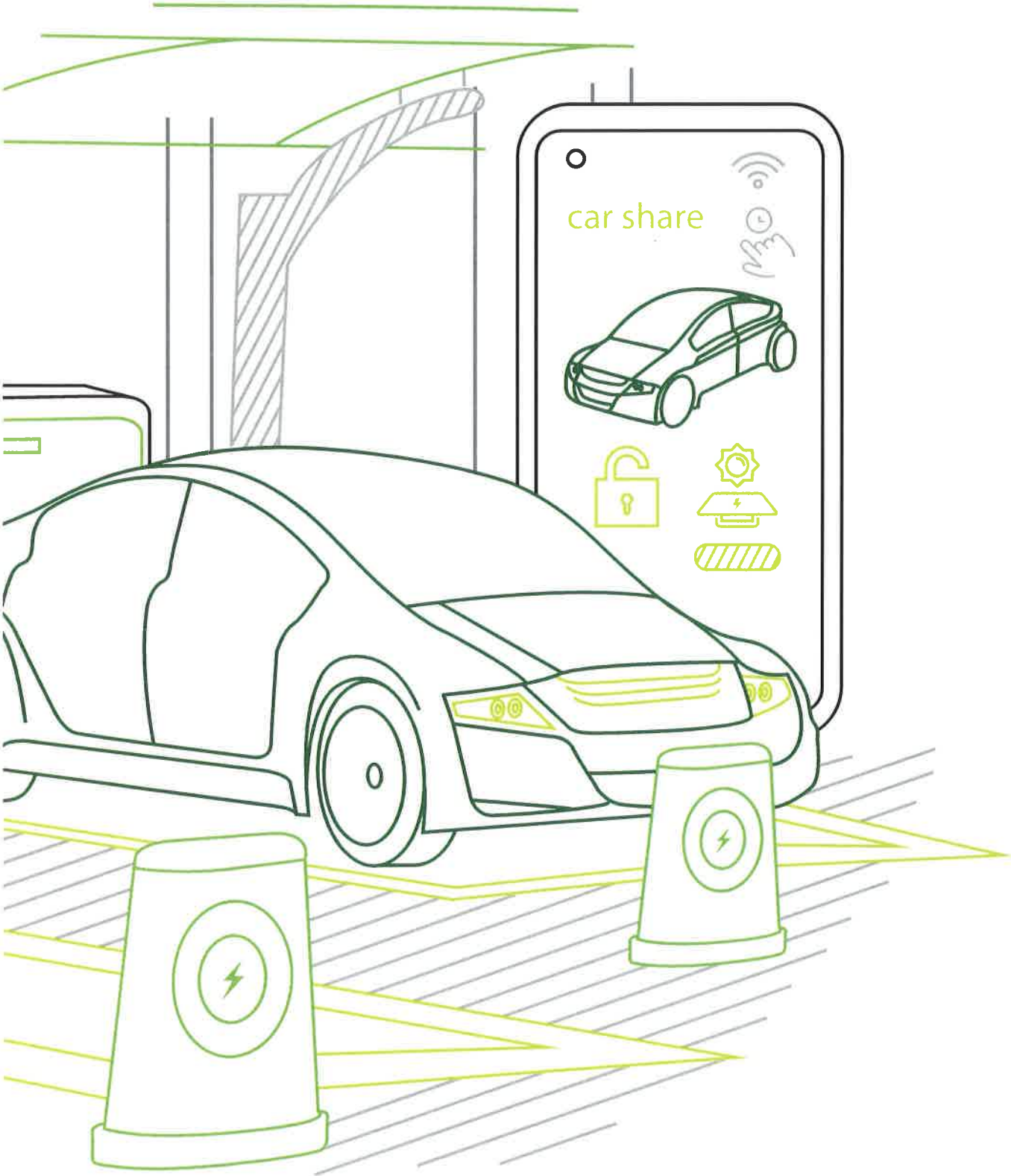
The North American fleet telematics market is in an early phase of market consolidation.

Future of Mobility and implications for fleet management

Deloitte's publication "The Future of Mobility" lays out a framework that posits the emergence of four concurrent "future states" within the mobility ecosystem. A key factor is that all four states are likely to co-exist across a number of geographies (urban, suburban, and rural) and consumer demographics to a varying extent and, therefore, represent characterizations of market segments existing in parallel rather than alternative scenarios.

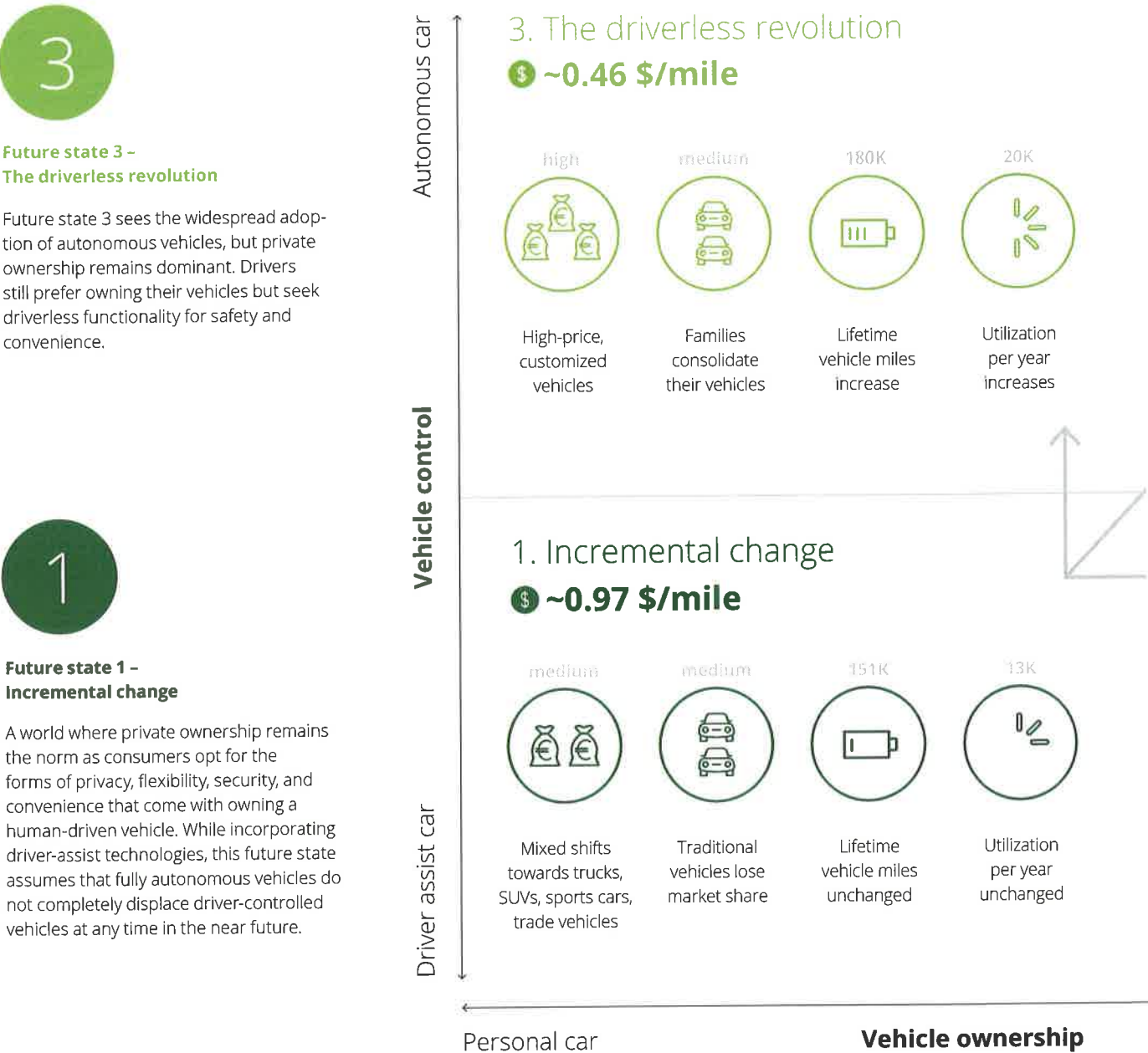
Deloitte sees a growing importance of car and ride-sharing as well as self-driving vehicles. For both developments, fleets and fleet management gain greater importance and will be key to participating in the prospective mobility value chain. Fleet managers should lay the groundwork today by enabling vehicles and infrastructure to be prepared for the future state of seamless door-to-door mobility.





Four states of the Future of Mobility

Fig. 22 – Future of Mobility: Changing usage and sales



4. A new age of accessible autonomy

\$ ~0.31 \$/mile



Future state 4 -
A new age of accessible autonomy

Future state 4 anticipates a convergence of both the autonomous and vehicle-sharing trends. Mobility management companies and fleet operators offer a range of passenger experiences to meet widely varied needs at differentiated price points, initially in urban areas but spreading rapidly into suburban communities.



2. A world of car sharing

\$ ~0.63 \$/mile



Future state 2 -
A world of car sharing

Future state 2 imagines how continued growth of ride-sharing and car-sharing may impact both companies and people. Economic scale and increased competition could drive the expansion of shared vehicle services into new geographic areas and more specialized customer segments. As shared mobility serves a greater proportion of local transportation needs, it might reduce the need for personal vehicles, particularly in homes that have several.



Vehicle ownership

Shared car

As the adoption of autonomous vehicles accelerates over the next 15–20 years, fleet managers will play a crucial role as the backbone for the future of mobility

Rise of autonomous technology

We expect autonomous vehicles (AVs) to become commercially available in the next 5–10 years, and to represent a sizable share of miles travelled by 2030.* These vehicles will be increasingly used to power on-demand mobility, increasing vehicle utilization and drastically reducing the total cost of travel per mile by up to 70 percent (see figure 23). As a result, more people will be able to afford using autonomous mobility services, including new user groups such as the elderly, disabled, and youth, helping to drive an increase in total annual miles travelled.

By 2040, we expect that shared mobility (both driver-driven and AV) could account for 70 percent of miles travelled, with shared AVs accounting for 57 percent (figure 23).

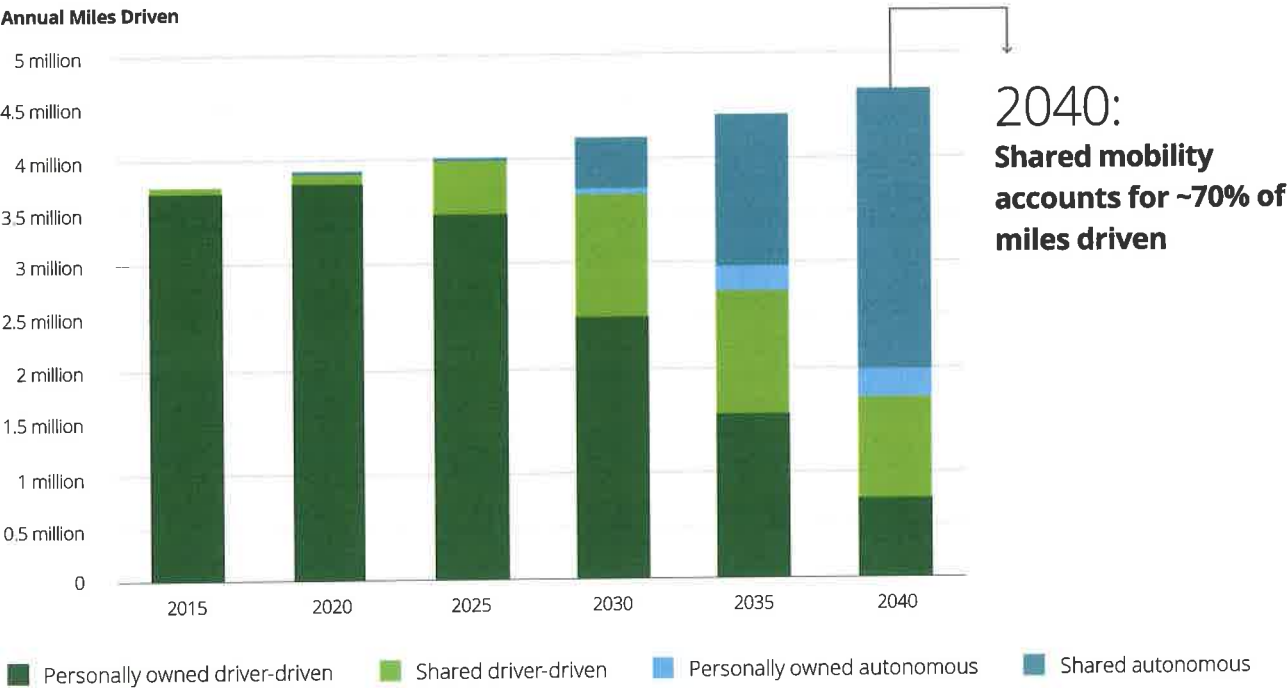
Changing demand

The total amount of time spent in vehicles could increase, but passengers will no longer be required to focus on the road, and can use this recovered time for other purposes.

Consequently, the demand for passenger-centric services (i.e., entertainment or business work) will sharply increase. Vehicle-based media consumption could rise to 95 billion hours per year in the US, up from ~20 billion per year today. This provides fleet managers with a prime opportunity to develop partnerships with media and telecom companies who want to reach passengers in their vehicles.

The in-vehicle experience could become a differentiator between mobility providers. The network of partnerships and alliances between AV manufacturers, media players, and mobility managers will determine who captures passenger value by accessing the ecosystems of the connected and autonomous vehicles.^{33 34}

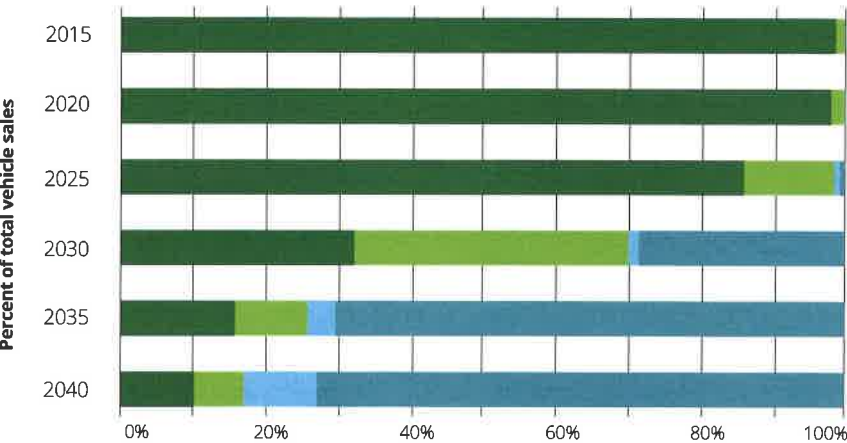
Fig. 23 – People miles driven in the US, by future state³⁵



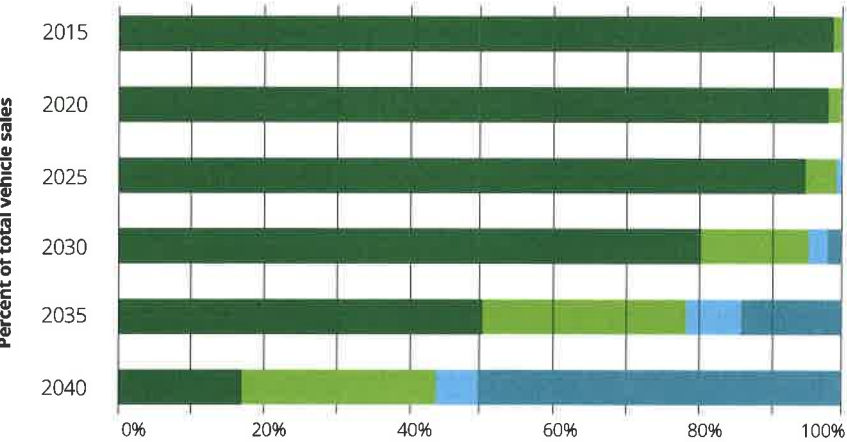
* As with any forward-looking estimate, our findings are necessarily subject to significant uncertainty and hinge on several key assumptions. That said, we believe our approach provides a solid foundation for initially thinking about the speed and magnitude of the changes coming to the mobility ecosystem over the next quarter century.

Fig. 24 – Vehicle sales by future state and geographic area in the US

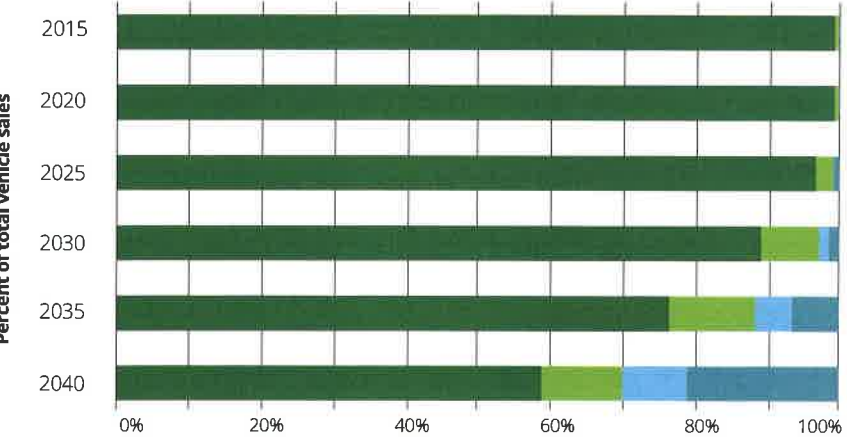
Urban



Suburban



Rural



By 2030, shared vehicles will overtake personally owned vehicles in urban areas. Shared driver-driven vehicles will grow quickly until 2030, but then lose market share to shared autonomous vehicles. Suburban areas will be slower to shift to shared and autonomous mobility, and rural adoption will be slow due to less-pronounced benefits.

Miles driven increase

The total miles traveled will increase due to autonomous vehicles. In urban areas, roughly 70 percent of new vehicles sales could be to shared autonomous fleets (figure 24).

We view the rise of AVs and shared mobility as the primary driver for this trend, as vehicle utilization increases.

Concurrently, increasing urbanization will help to facilitate the transition to shared mobility. The UN projects that 66 percent of the world's population will live in urban areas by 2050.³⁶ This increased concentration will allow providers of shared mobility to access large populations from a single point of operations and optimize the efficiency of their assets.

New business models

Fleet management will become the backbone in the future mobility ecosystem as the growing fleets of shared (multibrand) vehicles (whether for ride-sharing or car-sharing, and driver-driven or autonomous) have to be financed, deployed, maintained, and managed.

Outside of providing these fleet and full service leasing services OEMs could also choose to expand their value chain and to compete with mobility providers by providing seamless end-to-end integrated mobility solutions.

These "Mobility as a Service" (MaaS) offerings will be further adapted and localized to solve the individual mobility needs, most likely at a city level.

Autonomous vehicles will be available in urban areas first – further fueling the possibilities of urban mobility ecosystems and MaaS offerings.

Mobility as a Service (MaaS) relies on a digital platform that integrates end-to-end trip planning, booking, electronic ticketing, and payment services across all modes of transportation, public and private.

So far, most OEMs and others (e.g., FMCs) have focused their efforts on building and launching single mobility services (e.g., car sharing) as standalone offerings to open up new service-based revenue streams.

Ultimately, the goal of MaaS providers is to offer individuals a platform for planning and paying for a door-to-door journey across all modes of transportation based on real-time information by using a single app, rather than having to locate, book, and pay for each mode of transportation separately.

Two approaches

Based on their heritage, OEMs and tech companies use different approaches to evolve toward a MaaS provider.

Vehicle to platform

OEMs have built shared mobility offerings. Like car-sharing, such offerings (e.g., ReachNow) are based on fleets of their own vehicles. They also partner with ride hailing companies to supply them with vehicles (e.g., Uber and Toyota). As a result, OEMs gain experience in shared mobility solutions and fleet management.

To enhance their mobility offerings towards a holistic MaaS platform, OEMs will have to build new capabilities ranging from financing and managing different vehicle types, data management, mobile payment, and digital insurance solutions.

This is a significant shift from current OEM expertise, so companies will need to decide whether these capabilities should be developed in-house or be acquired. As the mobility ecosystem continues to form into an interconnected web of partnerships,

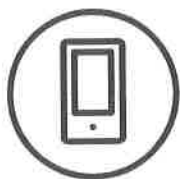
OEMs will need to identify how best to engage with not only private sector firms, but also public transportation providers.

Platform to vehicle

Tech companies are coming the other way. They have strong expertise in mobile platforms, application development, and a huge customer database available as they act as intermediaries between transportation providers and end users. On the other hand, they have to develop capabilities in vehicle financing and in particular fleet management.

Therefore, they must determine if they would like to partner and share their technology with OEMs, or if they want to develop these additional capabilities in-house.

Four key characteristics of MaaS providers



**Mobile app user interface
based on a digital platform**



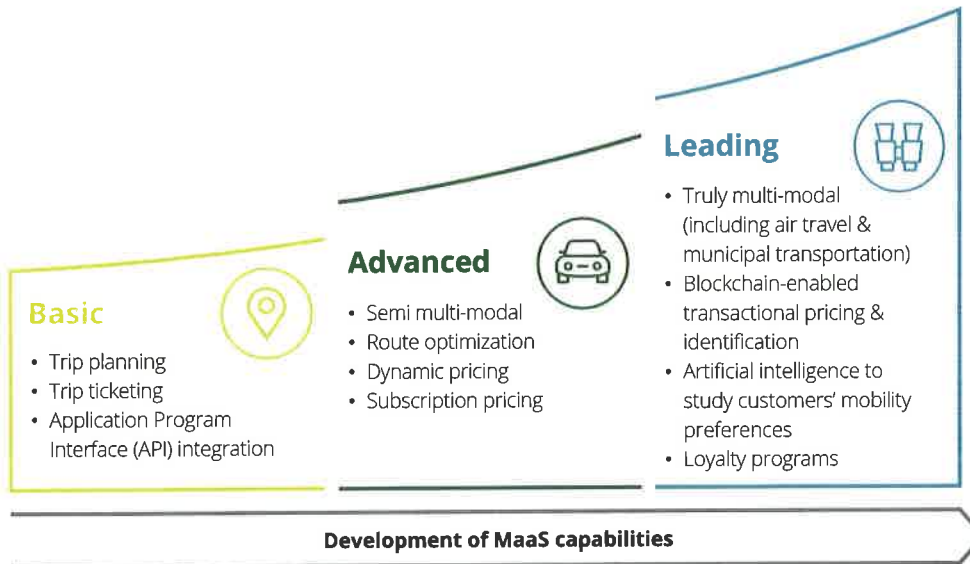
**Subscription and/or
transaction-based billing**



**Integration across
transportation modes**



Seamless payments

Fig. 25 – Evolution of MaaS offerings

Source: Deloitte Analysis

New self-confidence of cities in mobility ecosystems raises expectations towards the capabilities of a potential preferred MaaS provider.

MaaS as opportunity for increasing utilization of shared mobility offerings

Shared mobility offerings currently face the challenge of attracting enough customers to ensure utilization that allows profitable operations. Deloitte estimates that an average utilization of 12–17 percent is necessary to be profitable if the provider also owns the assets.

A single vehicle fleet can be used for various mobility services to adapt to geographic or time-of-day fluctuations in demand or user preferences. A vehicle can be used for corporate car sharing during the business day, for regular car sharing in the evening, and for ride hailing services during the night. Multiservice mobility is the driver for increasing fleet utilization. Deloitte expects utilization rates to double compared to single-use fleets. Utilization is key to the profitability of mobility services, as major cost components such as marketing, parking, and technology (platform, apps, etc.) are more or less fixed costs and don't increase proportionally.

A convincing MaaS offering is the opportunity for OEMs and their dealer bases to leverage existing fleets for different mobility services, as well as channel more users to their services.

Specifically, expanding MaaS offerings (or partnering with MaaS providers) provides OEMs with data-driven insights on individuals' travel patterns, which in turn could inform how and where fleet managers allocate their vehicles.

In future, successful fleet management execution will depend on accurately gauging location-specific market demand, in order to adjust supply appropriately and stage vehicles near high-demand areas.

Current market

The current global MaaS market is still highly fragmented and at an early stage in its development, with much innovation going on. Around 50 larger players are active within the market, but none of them are yet true global players.

EMEA providers are leading in terms of maturity (based on solution capabilities and number of transport modes supported), but lag behind the Americas' in terms of user base.

Future outlook

There are several reasons to expect the MaaS market to mature in the coming years. For cities, it helps move more people without the high investment costs of new infrastructure. For citizens, it offers a more seamless and tailored transit experience, and the technology required to make MaaS systems work is already present to a large degree.

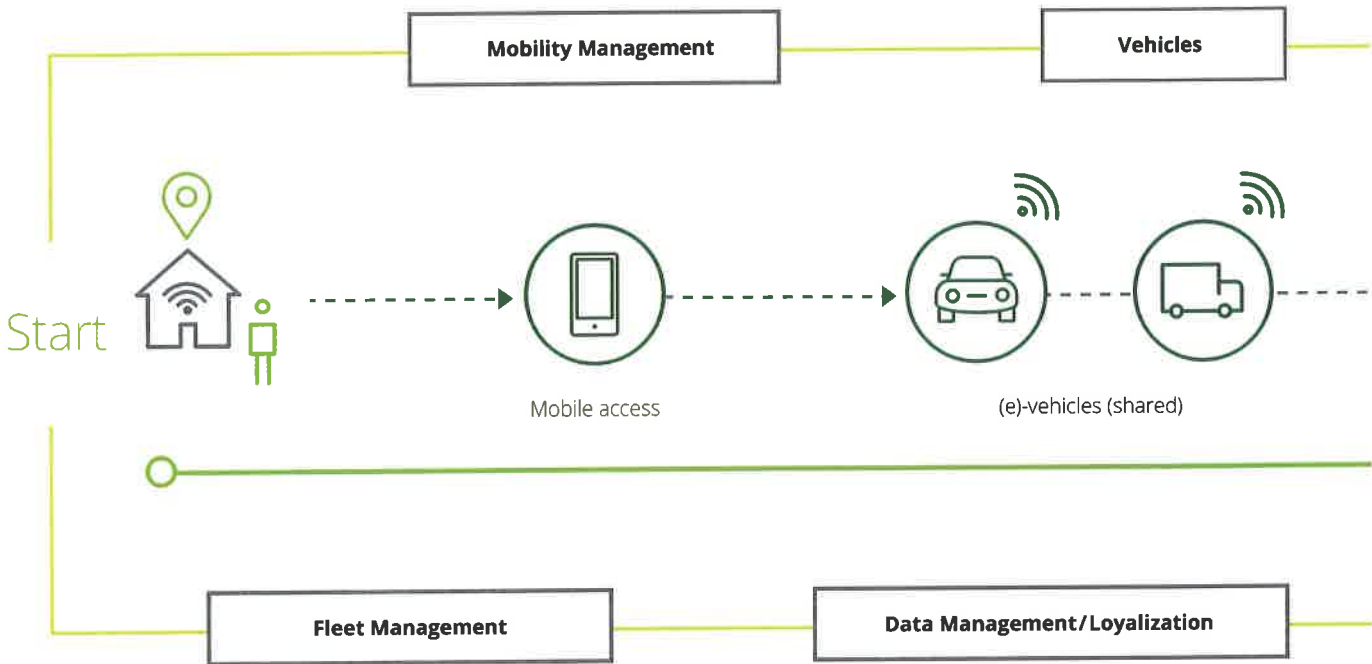
As the market develops, MaaS applications could become commoditized, which makes establishing a beachhead within key regions particularly important; in the long run, it is unlikely that a city will be served by more than one successful MaaS provider.

Technology market leaders that already have built significant scale with mapping technology and other customer platforms are well positioned to lead the next phase of MaaS development.

Fig. 26 – The Future of Mobility ecosystem: integrated and multi-modal inner-city customer journey

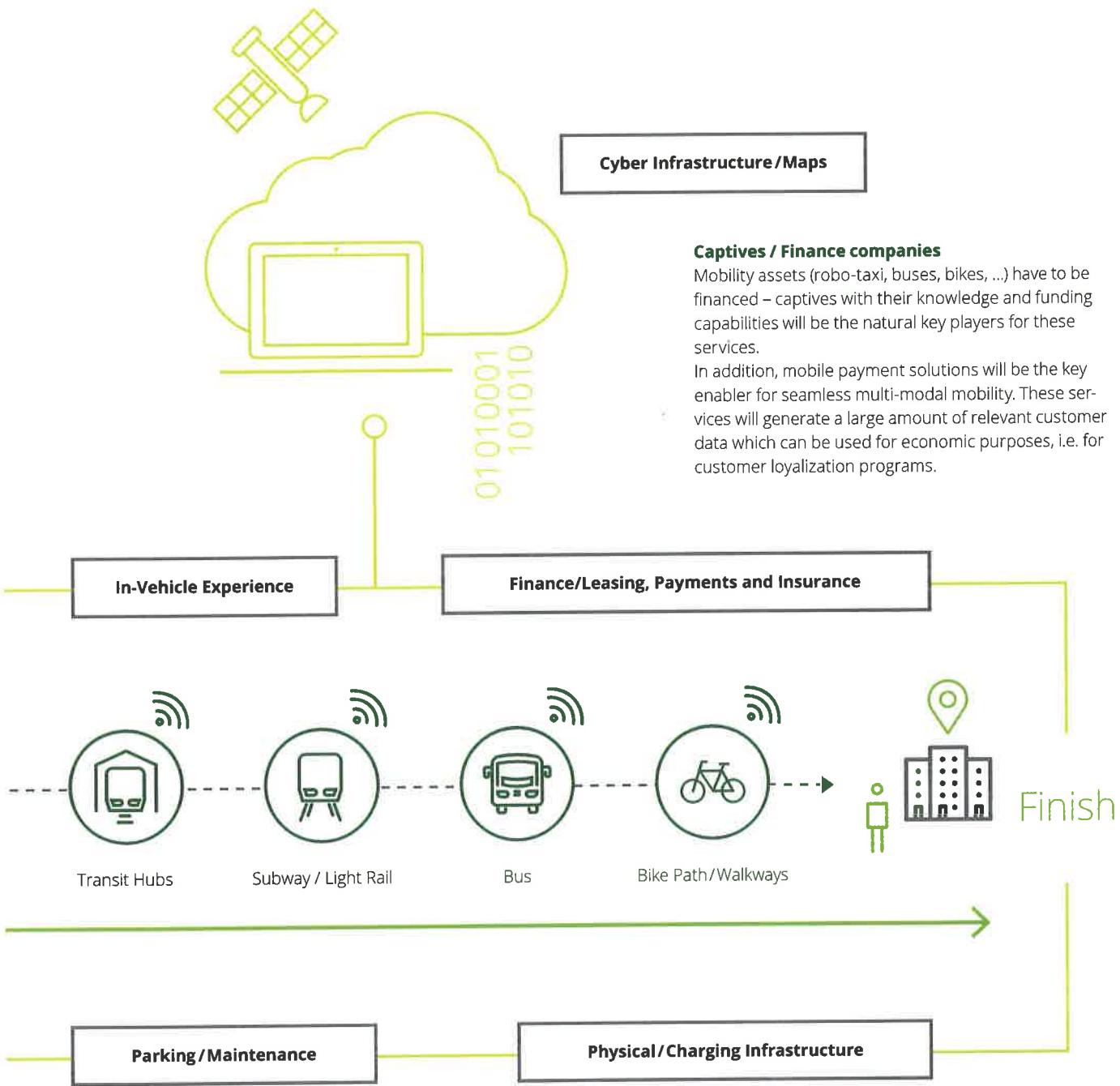
Mobility management providers

Mobility management services combine an individual's specific history and current circumstances with data from millions of other users and information from different modes of travel across the city. Using advanced analytics, they offer users tailored, seamless travel options.



OEMs / Fleet Management companies

Fleet operators store, maintain, and deploy shared autonomous vehicles throughout the city. Vehicle manufacturers build an array of shared self-driving options to meet the varying needs of millions of travelers.



Additional providers

The in-vehicle experience is enhanced by content providers offering a variety of options, from entertainment to business applications, and supported by advertisers and subscription fees.

City planners work closely with the private sector to operate and maintain critical infrastructure, from bike racks to train platforms and electric charging stations. These physical assets are increasingly smart and connected, allowing constant, real-time monitoring.

Conclusion

Today, fleet management in North America is a multibillion dollar industry that is highly consolidated. The top five players combined make up for more than 90 percent of managed vehicles. Tomorrow, the relevance of this market will further increase due to multiple influencing factors.

More and more OEMs will put their focus on this business as it is, or it will become an important sales channel for their vehicle sales.

Telecom and tech companies might want to enter the fleet management market to expand their current entertainment, telematics, or mobility platform offerings. The key strategic reason is that the fleet management industry will continue to evolve and become even more IT and data-driven in the future. Deloitte foresees tech companies being in a unique position to take ownership of customer access and data (mobility, payment, etc.), which will be key to monetizing the mobility ecosystem.

In addition, car rental companies and other mobility providers (such as MaaS providers) are tapping into fleet management, as this capability is one of the key enablers for nearly all future mobility services.

Consequently, existing fleet management companies need to rethink their position as asset managers towards integrated mobility providers that also offer services not necessarily related to the vehicles themselves. These providers can leverage various strategies to defend their business against new market entrants:

- Increase penetration of their already established customer base, market additional service offerings, and generate additional fee income within a stable customer base. This also includes selling finance &

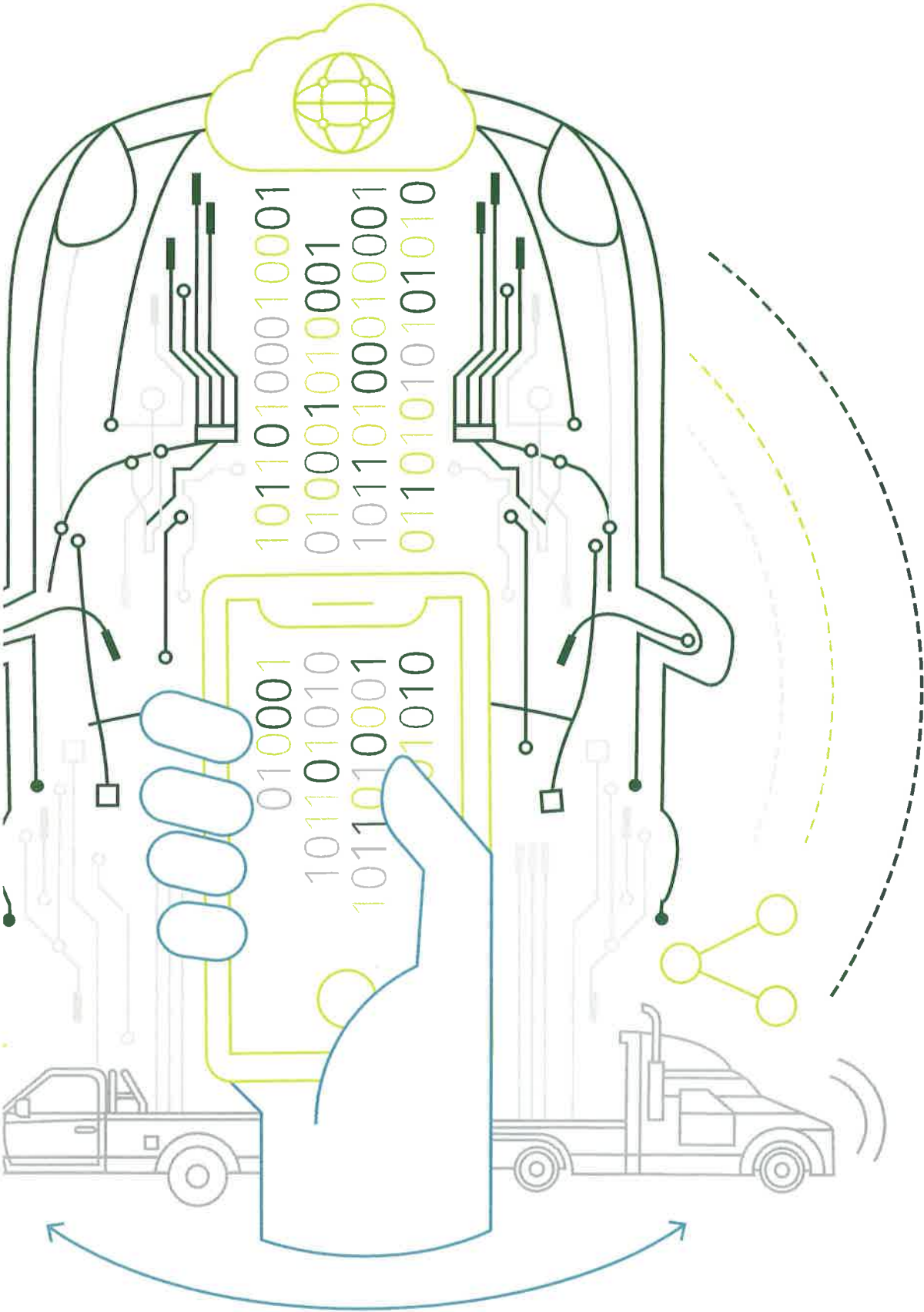
leasing products to customers who currently still own the assets themselves.

- Build expertise in the handling of AVs and their requirements, and how to manage AV fleets efficiently in large scale.
- Focus on conquering existing key accounts from their competitors.
- Expand their business into new markets and segments, as well as new customers such as government fleets.
- Enhance their current value proposition and footprint by acquiring other fleet management companies. Besides inorganic growth opportunities, this might enable them to further benefit from economies of scale.

The key to being successful will be operational excellence, both internally and in terms of services. Fleet managers need to focus on digitization, process improvement, operational efficiency, and competitive funding strategies. Investments in IT and data analysis capabilities should enable them to sell new and better services to clients like consulting with corporate functional fleet clients to manage overall savings in operational costs.

Either way, to cope with these trends and changes in the industry requires bold strategic choices amidst uncertainty. Fleet management will continue to become a truly global business, despite strong regional characteristics. Deloitte is ready to support your company in deriving the necessary strategies and actions for your journey within this market—regardless of whether your focus is the North American market or if you have a global perspective.





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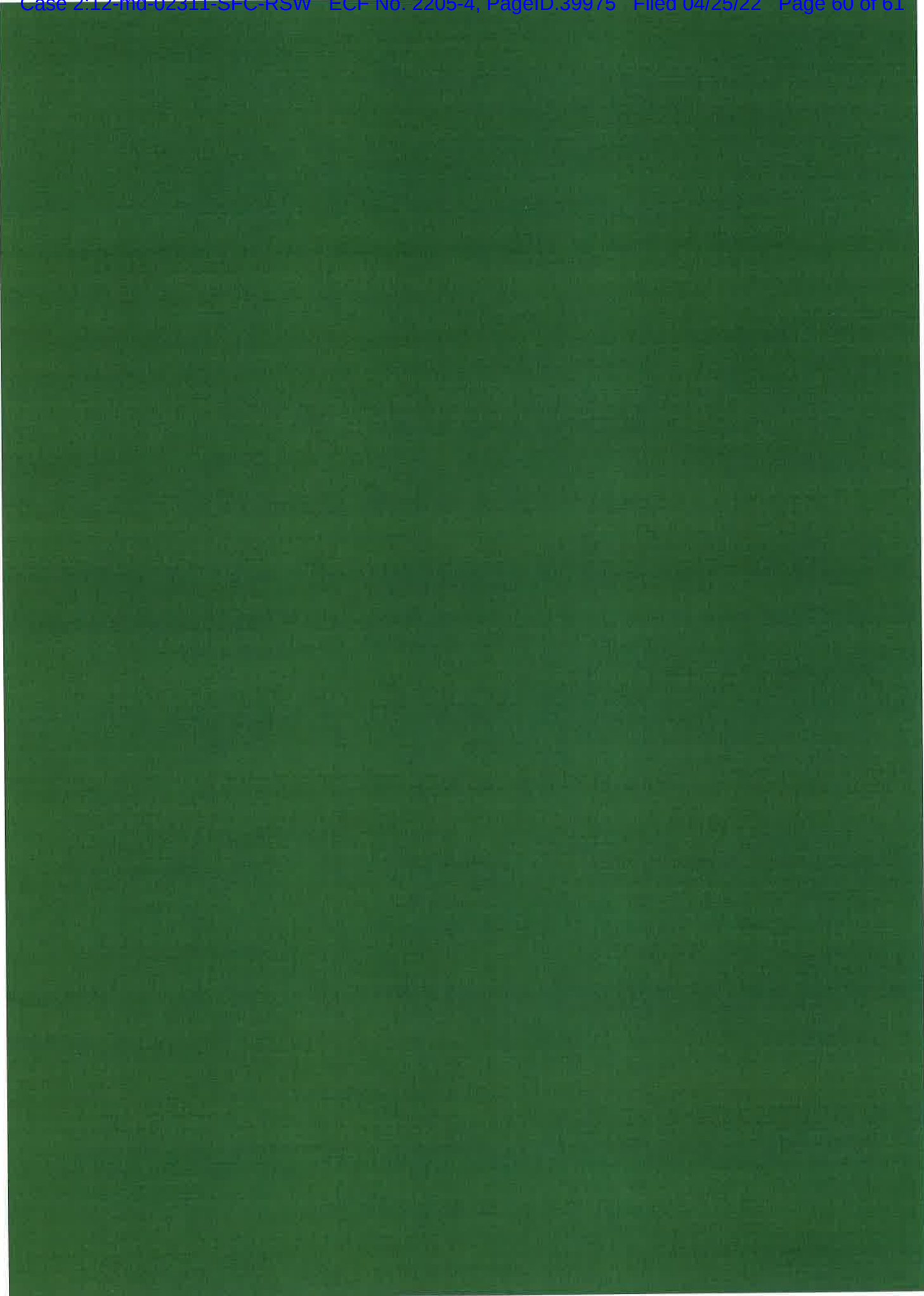
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